DATA I/O

LOGIC DIAGRAMS

Programmable Logic Devices

981-0020-002 JULY 86

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ORDERING INFORMATION

When ordering this manual, use Part Number 981-0020-002.

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Introduction

This document contains all available diagrams of logic devices that can be programmed with Data I/O products. These diagrams are based on manufacturer's data and have been modified to show fuse numbers and node numbers that are useful when using Data I/O products. Every resonable effort has been made to ensure the completeness and accuracy of the diagrams. However, Data I/O does not guarantee that these diagrams are complete and accurate in every respect or detail.

There may be logic diagrams in this document that do not appear on your product's device list or on a product device screen. This may be the case for one or more of the following reasons:

- Your product was not designed to support the device.
- The device is supported, but the logic diagram was not available at the time this manual was printed. Subsequent printings of this manual may include the diagrams. Check your product device list for the supported devices.
- The device is not supported at this time, but will be supported in later versions.

A list of logic diagrams, Table I., is provided before the diagrams to help you quickly locate the logic diagram of interest. Both the table and diagrams are arranged in numeric-alpha order. If the device is manufactured by more than one manufacturer, the device will be listed for each manufacturer. For example, device number 10H8 is manufactured by Lattice (LAT), Monolithic Memories, Incorporated (MMI) and National (NAT). Except for differences in device characteristics, the fuse map is the same for each one, therefore, there is only one diagram for the device.

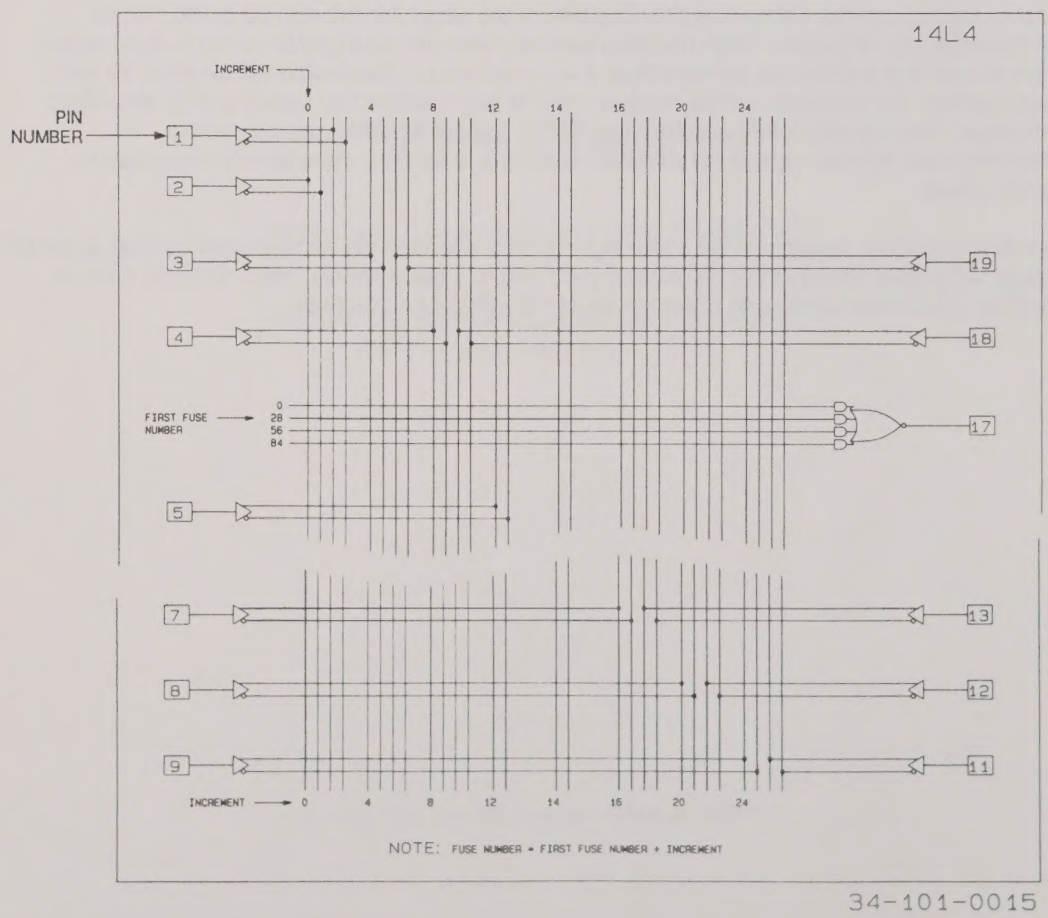
The device number appears in the upper right-hand corner and the diagram part number appears in the bottom right-hand corner of the diagram. If you need to order a specific logic diagram, contact the Data I/O service center and order by the 34-101-XXXX part number.

Using the Logic Diagrams

The logic diagrams describe the architecture of the PLD. Each fuse is represented by the intersection of an input line (verticle) and a product term line (horizontal). The fuses of the logic device are numbered, and the number of a given fuse in the diagram can be found as follows:

1. Locate the fuse intersection in the logic diagram.
2. Follow the product term line from that intersection to its left end and read the first fuse number for the row.
3. Follow the input line from the fuse intersection to either the top or bottom end and read the increment number.
4. Compute the fuse number by adding the first fuse number and the increment number.

The following figure shows the parts of the logic diagrams, identified by callouts.



34-101-0015

Table I. Logic Diagrams

Vendor Device Name Number	Part Number	Part Type
MMI 6L16	34-101-0085	PAL
MMI 8L14	34-101-0086	PAL
LAT 10H8-25/-35	34-101-0009	RAL
MMI 10H8/-2	34-101-0009	PAL
NAT 10H8/A/A2	34-101-0009	PAL
LAT 10L8-25/-35	34-101-0013	RAL
MMI 10L8/-2	34-101-0013	PAL
NAT 10L8/A/A2	34-101-0013	PAL
LAT 10P8-25/-35	34-101-0087	RAL
RIC 10P8A	34-101-0108	EPL
LAT 12H6-25/-35	34-101-0010	RAL
MMI 12H6/-2	34-101-0010	PAL
NAT 12H6/A/A2	34-101-0010	PAL
MMI 12L10	34-101-0025	PAL
NAT 12L10	34-101-0025	PAL
LAT 12L6-25/-35	34-101-0014	RAL
MMI 12L6/-2	34-101-0014	PAL
NAT 12L6/A/A2	34-101-0014	PAL
LAT 12P6-25/-35	34-101-0088	RAL
RIC 12P6A	34-101-0109	EPL
LAT 14H4-25/-35	34-101-0011	RAL
MMI 14H4/-2	34-101-0011	PAL
NAT 14H4/A/A2	34-101-0011	PAL
LAT 14H8-25/-35	34-101-0021	RAL
LAT 14L4-25/-35	34-101-0015	RAL
MMI 14L4/-2	34-101-0015	PAL
NAT 14L4/A/A2	34-101-0015	PAL
MMI 14L8	34-101-0026	PAL
NAT 14L8	34-101-0026	PAL
LAT 14L8-25/-35	34-101-0026	RAL
LAT 14P4-25/-35	34-101-0089	RAL
RIC 14P4A	34-101-0110	EPL
LAT 14P8-25/-35	34-101-0090	RAL
MMI 16A4	34-101-0017	PAL
MMI 16C1/-2	34-101-0019	PAL
NAT 16C1/A/A2	34-101-0019	PAL
LAT 16H2-25/-35	34-101-0012	RAL
MMI 16H2/-2	34-101-0012	PAL
NAT 16H2/A/A2	34-101-0012	PAL
LAT 16H6-25/-35	34-101-0022	RAL

Table I. Logic Diagrams (Continued)

Vendor Name	Device Number	Part Number	Part Type
AMD	16H8	34-101-0006	PAL
HAR	16H8	34-101-0006	HPL
HAR	16H8	34-101-0006	HPL
HAR	16H8 (77215)	34-101-0006	HPL
HAR	16H8 (77215)	34-101-0006	HPL
LAT	16H8-25/-35	34-101-0006	RAL
AMD	16HD8	34-101-0007	PAL
LAT	16L2-25/-35	34-101-0016	RAL
MMI	16L2/-2	34-101-0016	PAL
NAT	16L2/A/A2	34-101-0016	PAL
MMI	16L6	34-101-0027	PAL
NAT	16L6	34-101-0027	PAL
LAT	16L6-25/-35	34-101-0027	RAL
AMD	16L8	34-101-0001	PAL
HAR	16L8	34-101-0001	HPL
HAR	16L8	34-101-0001	HPL
HAR	16L8 (77209)	34-101-0001	HPL
HAR	16L8 (77209)	34-101-0001	HPL
TEX	16L8-15/-25	34-101-0001	PAL
LAT	16L8-25/-35	34-101-0001	RAL
TEX	16L8/A/A-2	34-101-0001	FOA
MMI	16L8/A/A-2/A-4	34-101-0001	PAL
NAT	16L8/A/A2	34-101-0001	PAL
CYP	16L8A	34-101-0001	FOA
CYP	16L8A/A-2	34-101-0001	FOA
MMI	16L8B	34-101-0001	PAL
NAT	16L8B	34-101-0001	PAL
HAR	16LC8	34-101-0001	HPL
SSS	16LC8-45/-55/-70	34-101-0001	SPL
AMD	16LD8	34-101-0005	PAL
LAT	16P2-25/-35	34-101-0091	RAL
RIC	16P2A	34-101-0111	EPL
LAT	16P6-25/-35	34-101-0092	RAL
HAR	16P8	34-101-0039	HPL
HAR	16P8	34-101-0039	HPL
RIC	16P8	34-101-0112	EPL
LAT	16P8-25/-35	34-101-0039	RAL
HAR	16PC8	34-101-0039	HPL
AMD	16R4	34-101-0002	PAL
AMD	16R4	34-101-0002	PAL
HAR	16R4	34-101-0002	HPL
HAR	16R4	34-101-0002	HPL

Table I. Logic Diagrams (Continued)

Vendor	Device Name	Part Number	Part Type
HAR	16R4 (77210)	34-101-0002	HPL
HAR	16R4 (77210)	34-101-0002	HPL
TEX	16R4-15/-25	34-101-0002	PAL
LAT	16R4-25/-35	34-101-0002	RAL
TEX	16R4/A/A-2	34-101-0002	FOA
MMI	16R4/A/A-2/A-4	34-101-0002	PAL
NAT	16R4/A/A2	34-101-0002	PAL
CYP	16R4A	34-101-0002	FOA
CYP	16R4A/A-2	34-101-0002	FOA
MMI	16R4B	34-101-0002	PAL
NAT	16R4B	34-101-0002	PAL
AMD	16R6	34-101-0003	PAL
AMD	16R6	34-101-0003	PAL
HAR	16R6	34-101-0003	HPL
HAR	16R6	34-101-0003	HPL
MMI	16R6	34-101-0003	PAL
HAR	16R6 (77211)	34-101-0003	HPL
HAR	16R6 (77211)	34-101-0003	HPL
TEX	16R6-15/-25	34-101-0003	PAL
LAT	16R6-25/-35	34-101-0003	RAL
TEX	16R6/A/A-2	34-101-0003	FOA
NAT	16R6/A/A2	34-101-0003	PAL
CYP	16R6A	34-101-0003	FOA
CYP	16R6A/A-2	34-101-0003	FOA
MMI	16R6B	34-101-0003	PAL
NAT	16R6B	34-101-0003	PAL
AMD	16R8	34-101-0004	PAL
AMD	16R8	34-101-0004	PAL
HAR	16R8	34-101-0004	HPL
HAR	16R8	34-101-0004	HPL
MMI	16R8	34-101-0004	PAL
HAR	16R8 (77212)	34-101-0004	HPL
HAR	16R8 (77212)	34-101-0004	HPL
TEX	16R8-15/-25	34-101-0004	PAL
LAT	16R8-25/-35	34-101-0004	RAL
TEX	16R8/A/A-2	34-101-0004	FOA
NAT	16R8/A/A2	34-101-0004	PAL
CYP	16R8A	34-101-0004	FOA
CYP	16R8A/A-2	34-101-0004	FOA
MMI	16R8B	34-101-0004	PAL

Table I. Logic Diagrams (Continued)

Vendor	Device Name	Part Number	Part Type
NAT	16R8B	34-101-0004	PAL
MMI	16RA8	34-101-0058	PAL
HAR	16RC4	34-101-0002	HPL
SSS	16RC4-25/-35/-45	34-101-0002	SPL
HAR	16RC6	34-101-0003	HPL
SSS	16RC6-25/-35/-45	34-101-0003	SPL
HAR	16RC8	34-101-0004	HPL
SSS	16RC8-25/-35/-45	34-101-0004	SPL
LAT	16RP4-25/-35	34-101-0040	RAL
MMI	16RP4A	34-101-0040	PAL
RIC	16RP4B	34-101-0113	EPL
LAT	16RP6-25/-35	34-101-0041	RAL
MMI	16RP6A	34-101-0041	PAL
RIC	16RP6B	34-101-0114	EPL
LAT	16RP8-25/-35	34-101-0042	RAL
MMI	16RP8A	34-101-0042	PAL
RIC	16RP8B	34-101-0115	EPL
LAT	16V8-25/-35	34-101-0096	GAL
MMI	16X4	34-101-0018	PAL
LAT	18H4-25/-35	34-101-0023	RAL
MMI	18L4	34-101-0028	PAL
NAT	18L4	34-101-0028	PAL
LAT	18L4-25/-35	34-101-0028	RAL
LAT	18P4-25/-35	34-101-0097	RAL
AMD	18P8	34-101-0059	PAL
MMI	20C1	34-101-0030	PAL
NAT	20C1	34-101-0030	PAL
CYP	20G10	34-101-0081	PAL
LAT	20H2-25/-35	34-101-0024	RAL
LAT	20H8-25/-35	34-101-0098	RAL
MMI	20L10	34-101-0031	PAL
NAT	20L10	34-101-0031	PAL
MMI	20L2	34-101-0029	PAL
NAT	20L2	34-101-0029	PAL
LAT	20L2-25/-35	34-101-0029	RAL
LAT	20L8-25/-35	34-101-0035	RAL
NAT	20L8/A	34-101-0035	PAL
MMI	20L8/B	34-101-0035	PAL
TEX	20L8A	34-101-0035	FOA
SSS	20LC8-45/-55/-70	34-101-0035	SPL

Table I. Logic Diagrams (Continued)

Vendor	Device Name	Part Number	Part Type
LAT	20P2-25/-35	34-101-0099	RAL
LAT	20P8-25/-35	34-101-0080	RAL
LAT	20R4-25/-35	34-101-0036	RAL
NAT	20R4/A	34-101-0036	PAL
TEX	20R4A	34-101-0036	FOA
MMI	20R4A/A-2/B	34-101-0036	PAL
LAT	20R6-25/-35	34-101-0037	RAL
NAT	20R6/A	34-101-0037	PAL
TEX	20R6A	34-101-0037	FOA
MMI	20R6A/A-2/B	34-101-0037	PAL
LAT	20R8-25/-35	34-101-0038	RAL
NAT	20R8/A	34-101-0038	PAL
TEX	20R8A	34-101-0038	FOA
MMI	20R8A/A-2/B	34-101-0038	PAL
MMI	20RA10	34-101-0046	PAL
LAT	20RP4-25/-35	34-101-0077	RAL
LAT	20RP6-25/-35	34-101-0078	RAL
LAT	20RP8-25/-35	34-101-0079	RAL
MMI	20RS10	34-101-0044	PAL
MMI	20RS4	34-101-0047	PAL
MMI	20RS8	34-101-0045	PAL
MMI	22RX8	34-101-0074	PAL
MMI	20S10	34-101-0043	PAL
LAT	20V8-25/-35	34-101-0084	GAL
MMI	20X10	34-101-0034	PAL
NAT	20X10	34-101-0034	PAL
MMI	20X10A	34-101-0034	PAL
MMI	20X4	34-101-0032	PAL
NAT	20X4	34-101-0032	PAL
MMI	20X4A	34-101-0032	PAL
MMI	20X8	34-101-0033	PAL
NAT	20X8	34-101-0033	PAL
MMI	20X8A	34-101-0033	PAL
SSS	20XC8-25/-35/-45	34-101-0033	SPL
AMD	22V10/A	34-101-0008	PAL
AMD	22V10/A	34-101-0008	PAL
TI	22VP10	34-101-0082	PAL
MMI	32R16N/L/J	34-101-0100	PAL
MMI	32R16N/NL/J	34-101-0100	PAL
MMI	32VX10	34-101-0075	PAL

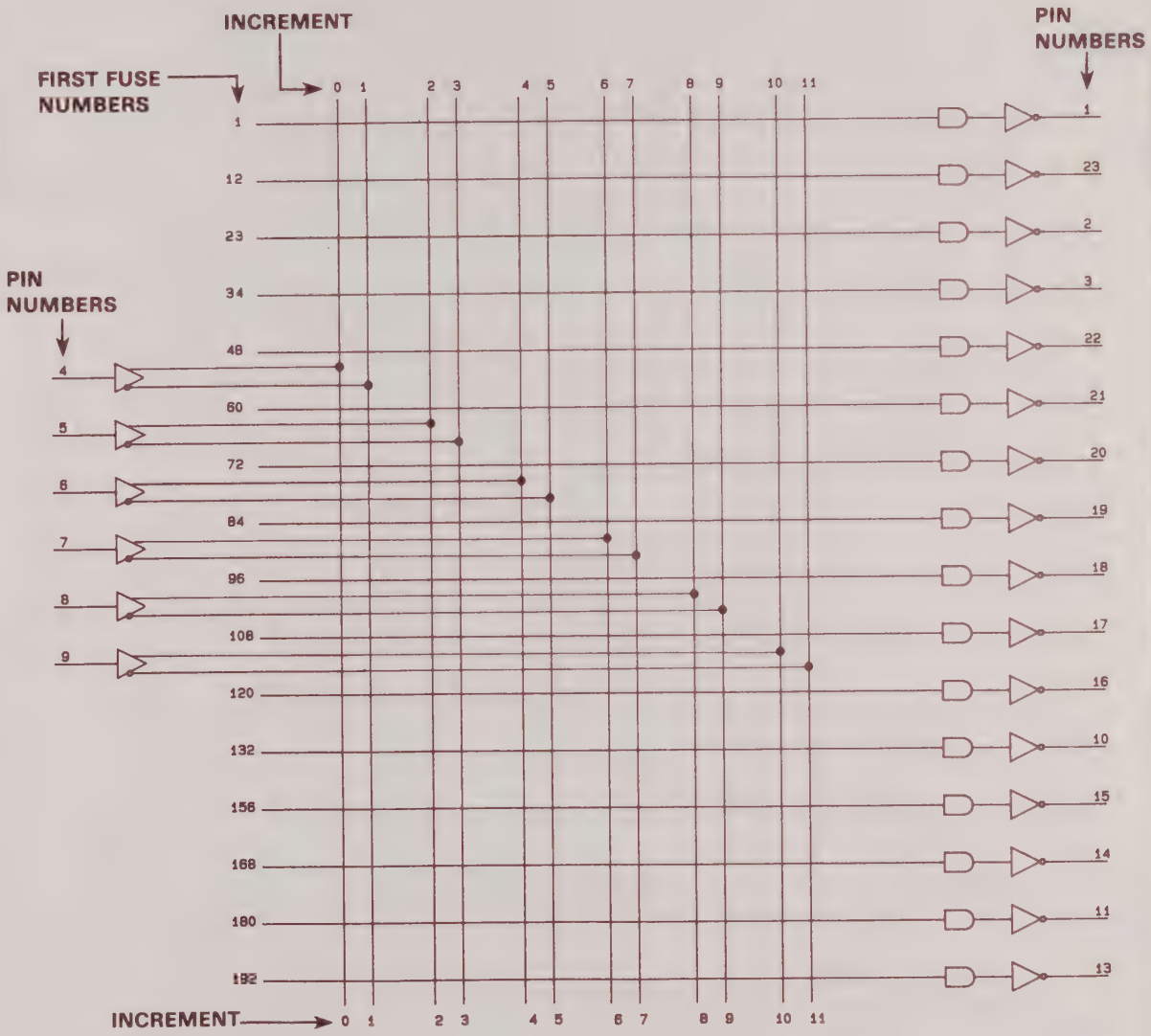
Table I. Logic Diagrams (Continued)

Vendor Device Name	Part Number	Part Type
INT 5C121	34-101-0101	EPLD
HAR 16P8 (77216)	34-101-0039	HPL
HAR 16P8 (77216)	34-101-0039	HPL
SIG 82S100/PLS100	34-101-0048	FPLA
SIG 82S100/PLS100	34-101-0048	FPLA
SIG 82S101/PLS101	34-101-0048	FPLA
SIG 82S101/PLS101	34-101-0048	FPLA
SIG 82S102/PLS102	34-101-0049	FPGA
SIG 82S102/PLS102	34-101-0049	FPGA
SIG 82S103/PLS103	34-101-0049	FPGA
SIG 82S103/PLS103	34-101-0049	FPGA
SIG 82S104/PLS104	34-101-0050	FPLS
SIG 82S104/PLS104	34-101-0050	FPLS
SIG 82S105/PLS105	34-101-0050	FPLS
SIG 82S105/PLS105	34-101-0050	FPLS
SIG 82S150/PLS150	34-101-0102	FPGA
SIG 82S151/PLS151	34-101-0103	FPGA
SIG 82S152/PLS152	34-101-0051	FPLA
SIG 82S152/PLS152	34-101-0051	FPLA
HAR 82S153	34-101-0051	HPL
HAR 82S153	34-101-0051	HPL
HAR 82S153 (77153)	34-101-0051	HPL
HAR 82S153 (77153)	34-101-0051	HPL
SIG 82S153/PLS153	34-101-0051	FPLA
SIG 82S153/PLS153	34-101-0051	FPLA
SIG 82S153A/PLS153A	34-101-0051	FPLA
SIG 82S154/PLS154	34-101-0052	FPLS
SIG 82S155/PLS155	34-101-0052	FPLS
SIG 82S156/PLS156	34-101-0053	FPLS
SIG 82S157/PLS157	34-101-0053	FPLS
SIG 82S158/PLS158	34-101-0054	FPLS
SIG 82S158/PLS158	34-101-0054	FPLS
SIG 82S159/PLS159	34-101-0054	FPLS
SIG 82S159/PLS159	34-101-0054	FPLS
SIG 82S161/PLS161	34-101-0055	FPLA
SIG 82S162/PLS162	34-101-0060	FPLA
SIG 82S163/PLS163	34-101-0061	FPLA
SIG 82S166/PLS166	34-101-0056	FPLA
SIG 82S167/PLS167	34-101-0056	FPLA
SIG 82S168/PLS168	34-101-0062	FPLS
SIG 82S173/PLS173	34-101-0063	FPLS

Table I. Logic Diagrams (Continued)

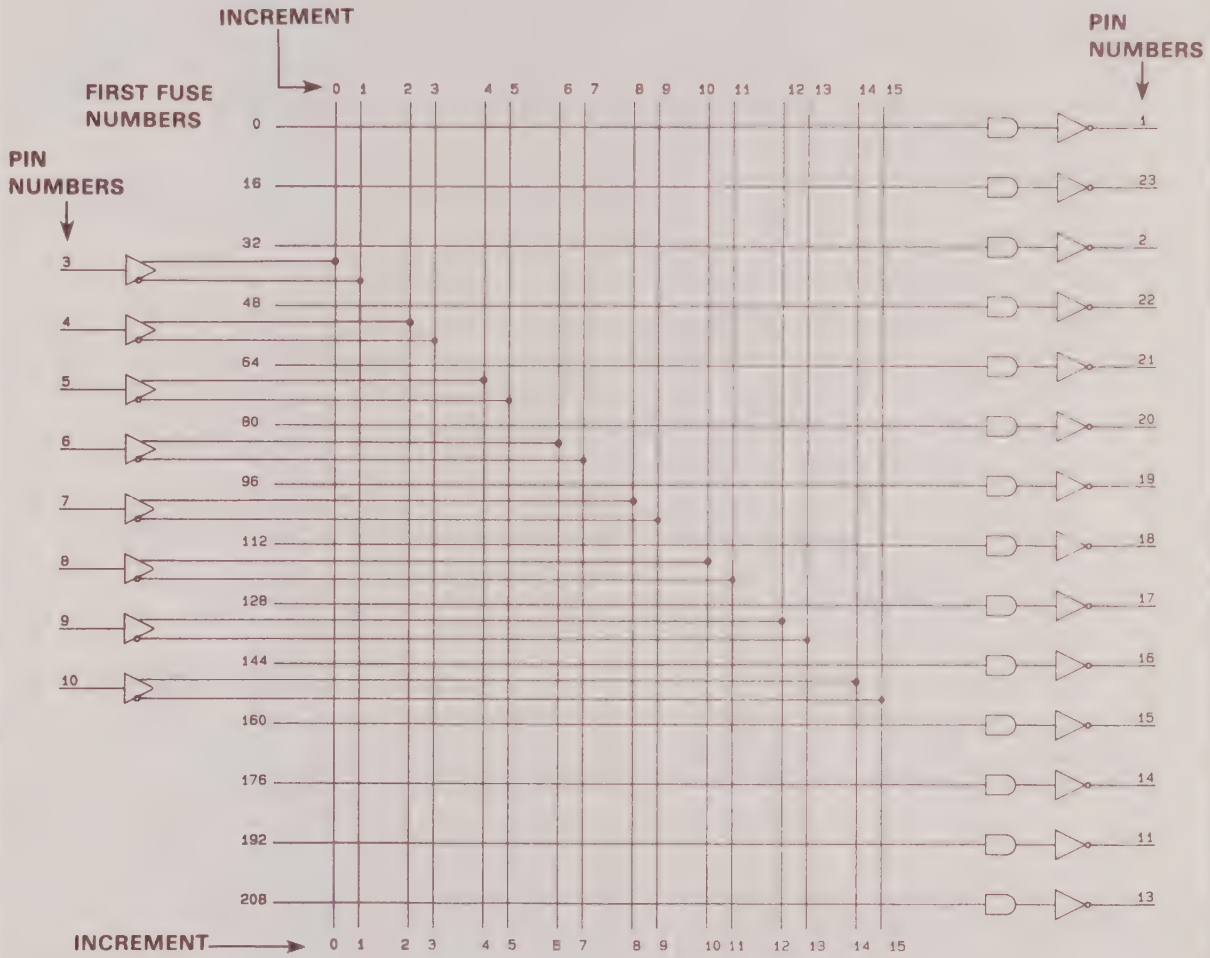
Vendor Device Name	Part Number	Part Type
NAT 87X839	34-101-0057	FPLA
NAT 87X840	34-101-0057	FPLA
SIG CK2605	34-101-0064	FPLA
ALT EP300	34-101-0073	EPLD
ALT EP310	34-101-0073	EPLD
ALT EP320	34-101-0083	EPLD
ALT EP600	34-101-0106	EPLD
ALT EP900	34-101-0107	EPLD
ALT EP1210	34-101-0105	EPLD
TEX N82S105A	34-101-0050	FPLS
TEX R19L8A	34-101-0065	PAL
TEX R19R4A	34-101-0068	PAL
TEX R19R6A	34-101-0067	PAL
TEX R19R8A	34-101-0066	PAL
TEX T19L8A	34-101-0069	PAL
TEX T19R4A	34-101-0072	PAL
TEX T19R6A	34-101-0071	PAL
TEX T19R8A	34-101-0070	PAL
TEX TIFPLA839	34-101-0057	FPLA
TEX TIFPLA840	34-101-0057	FPLA
VTI VP10P8	34-101-0108	EPL
VTI VP12P6	34-101-0109	EPL
VTI VP14P4	34-101-0110	EPL
VTI VP16P2	34-101-0111	EPL
VTI VP16P8	34-101-0112	EPL
VTI VP16RP4	34-101-0113	EPL
VTI VP16RP6	34-101-0114	EPL
VTI VP16RP8	34-101-0115	EPL

Logic Diagram PAL6L16



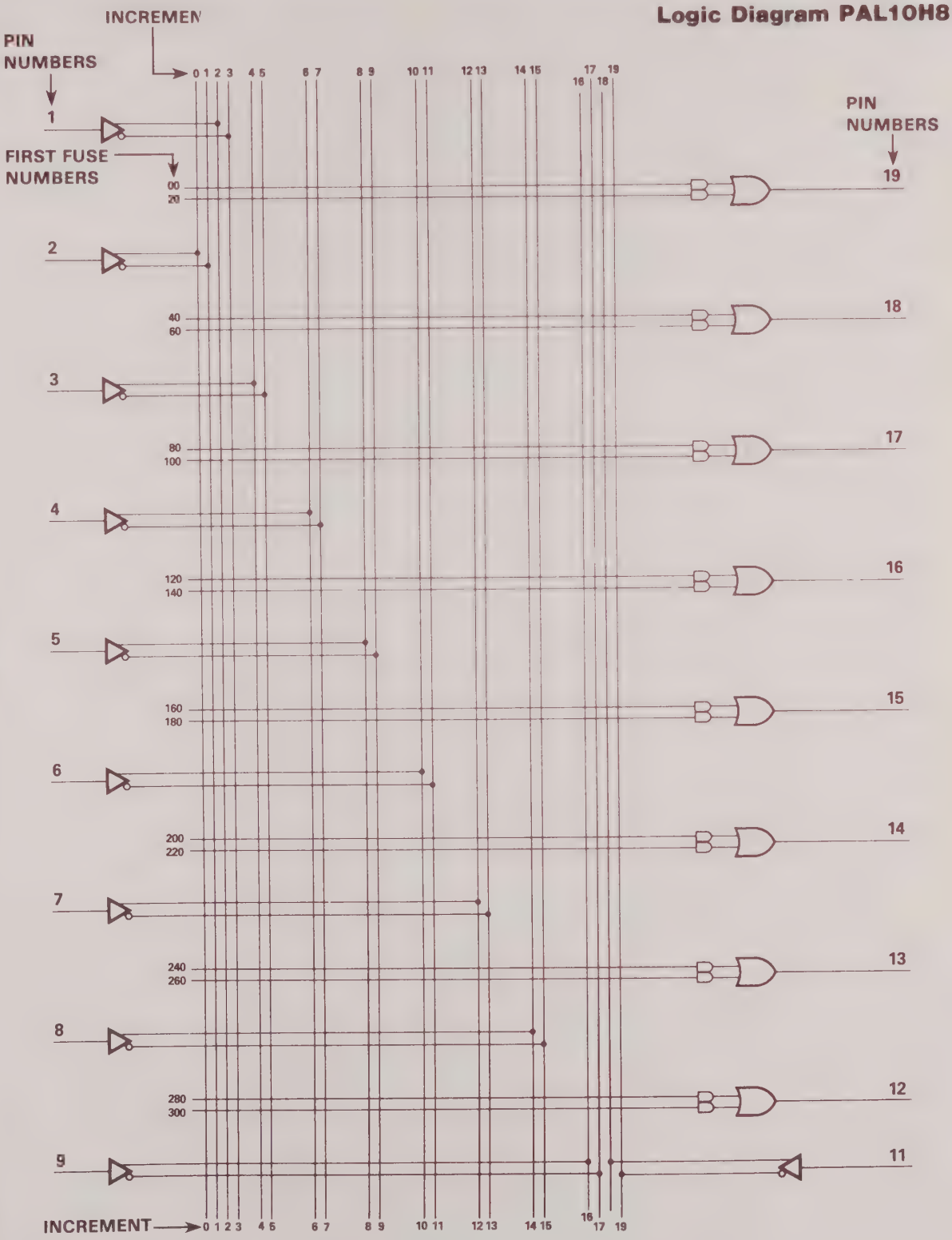
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL8L14



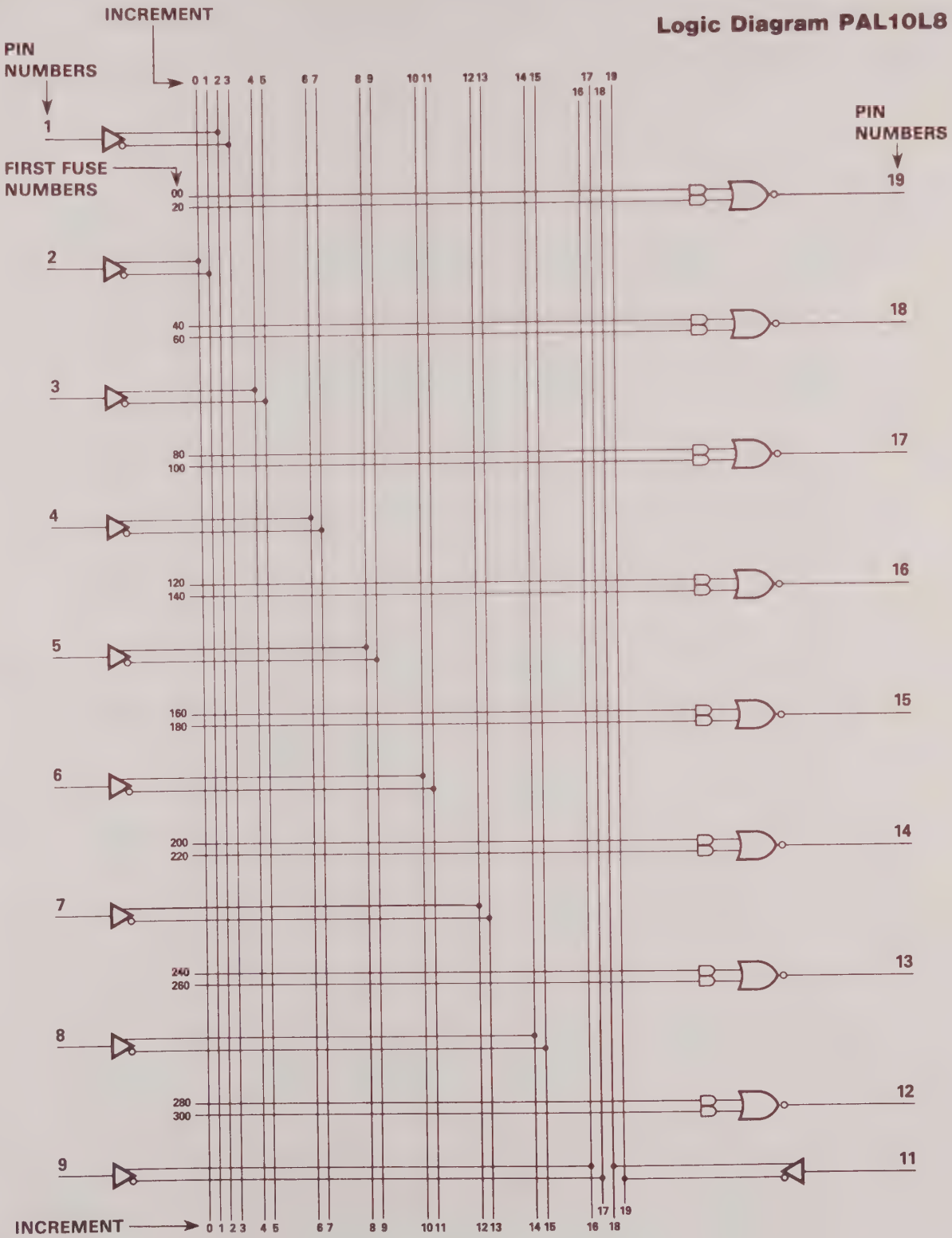
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL10H8



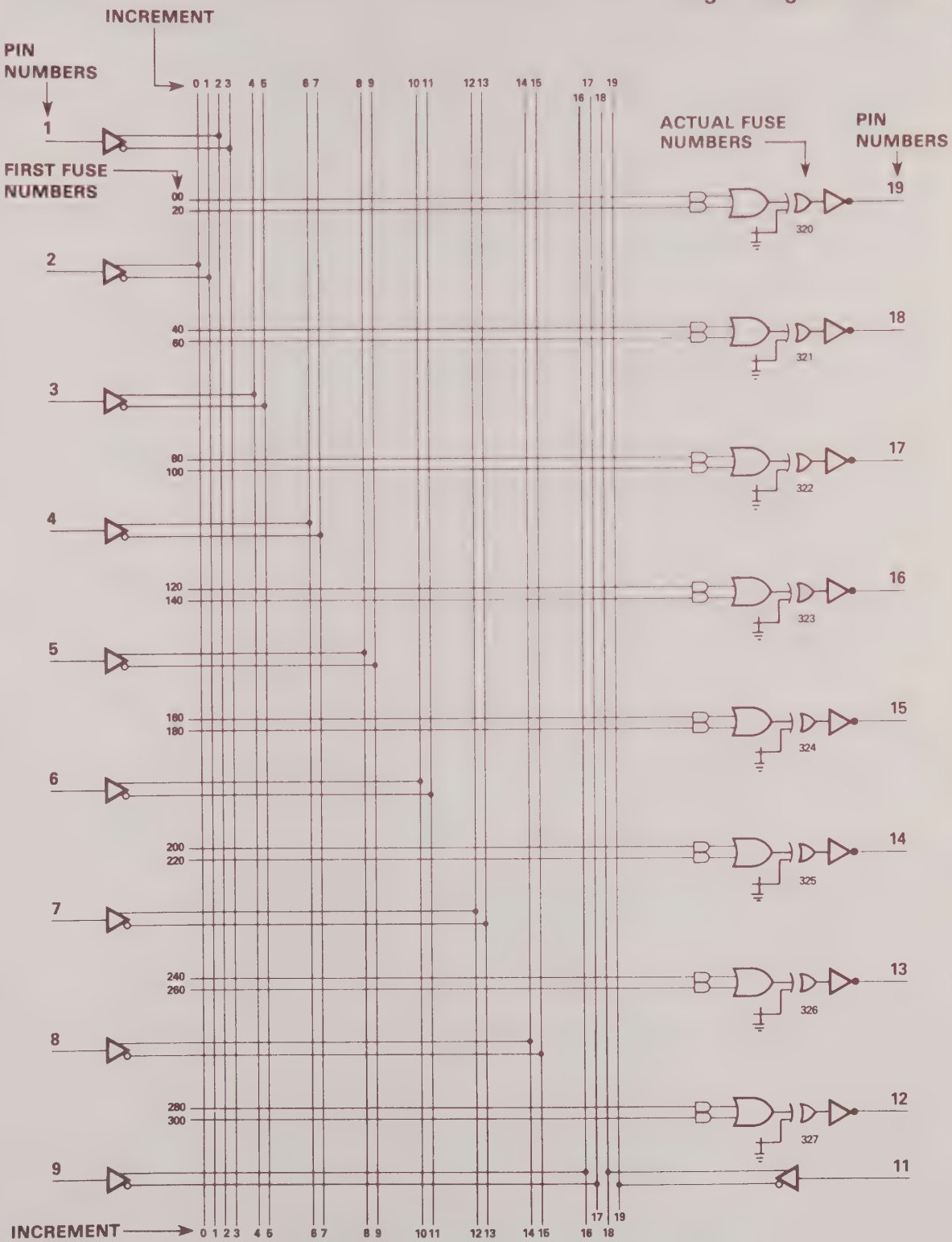
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL10L8



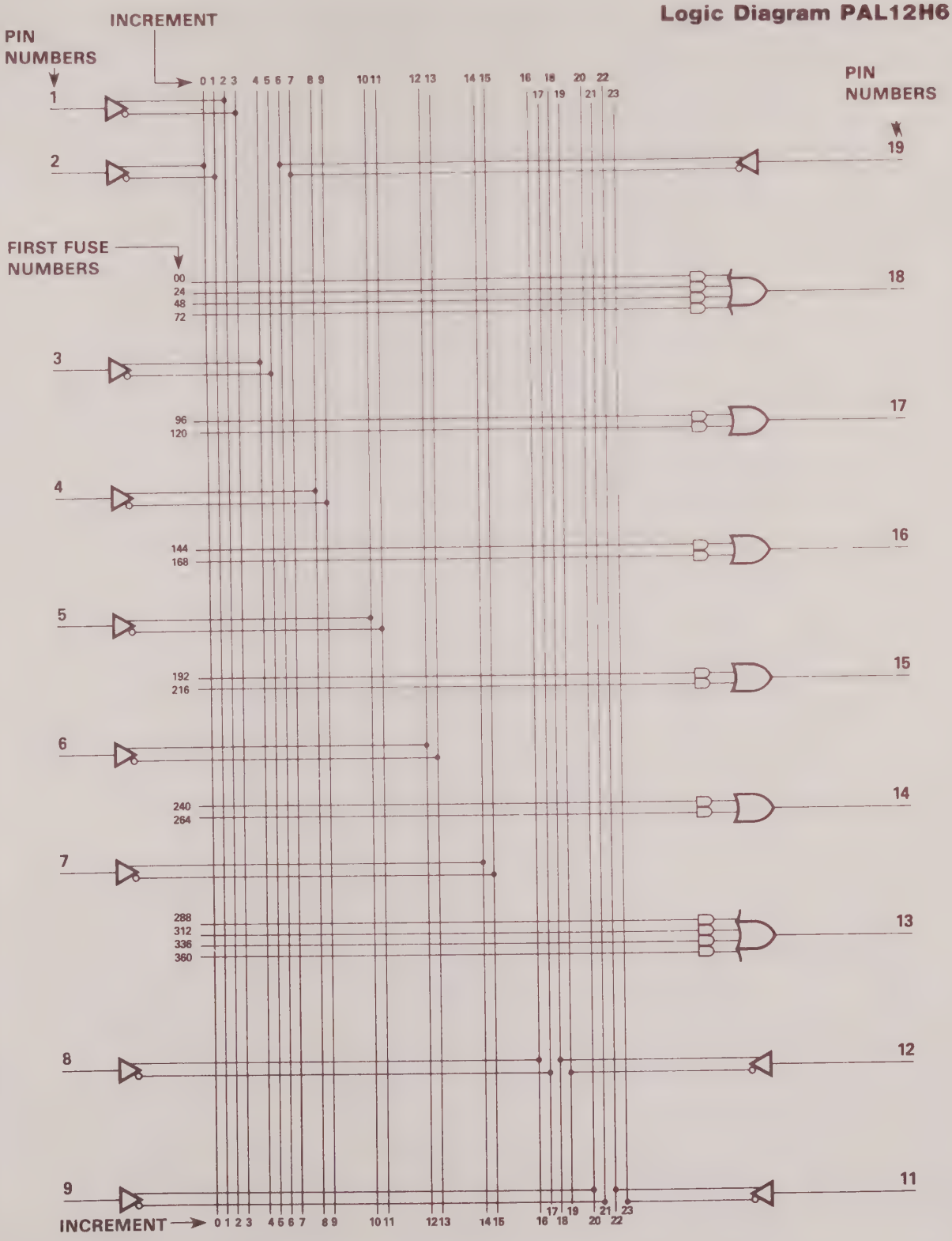
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL10P8



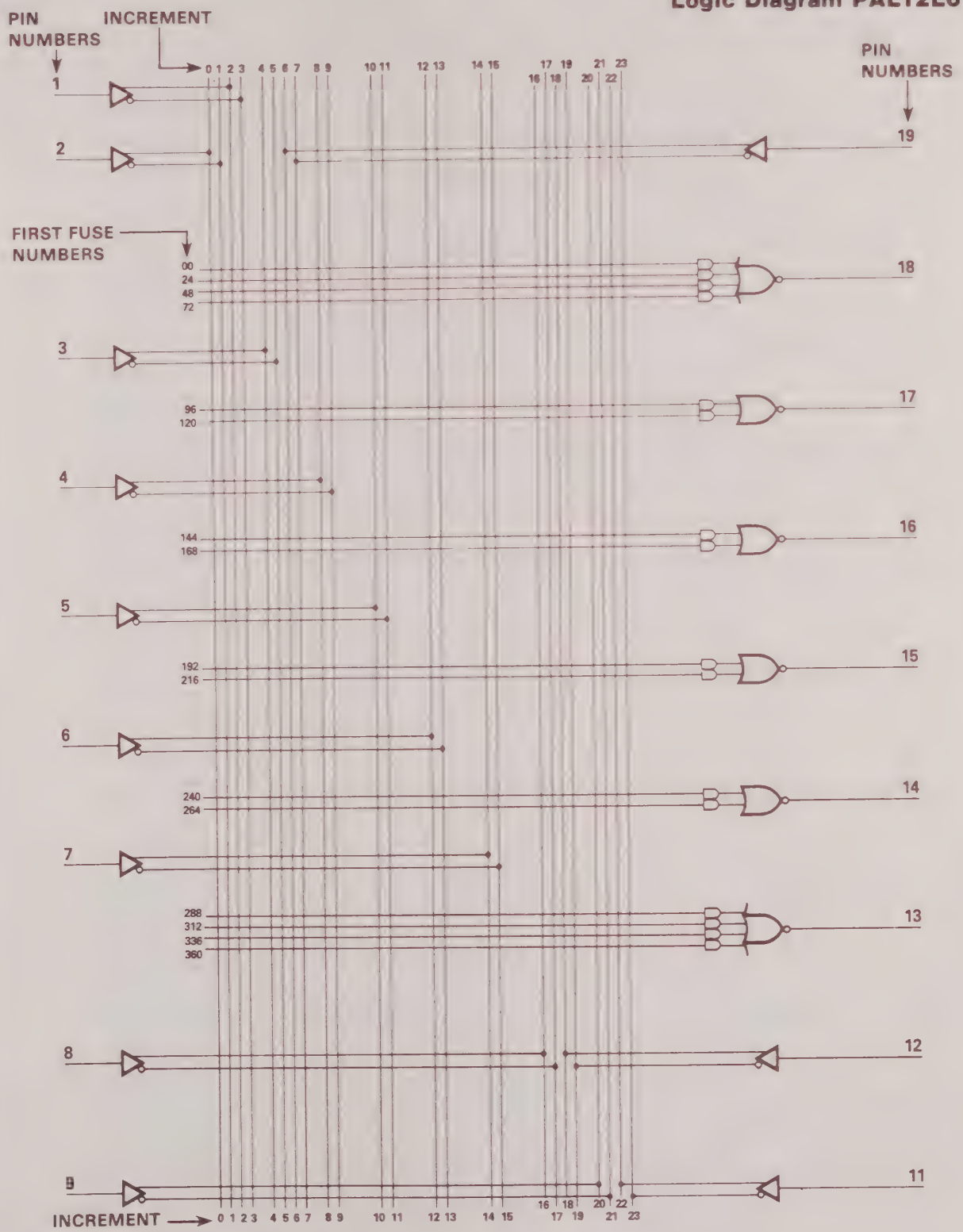
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL12H6



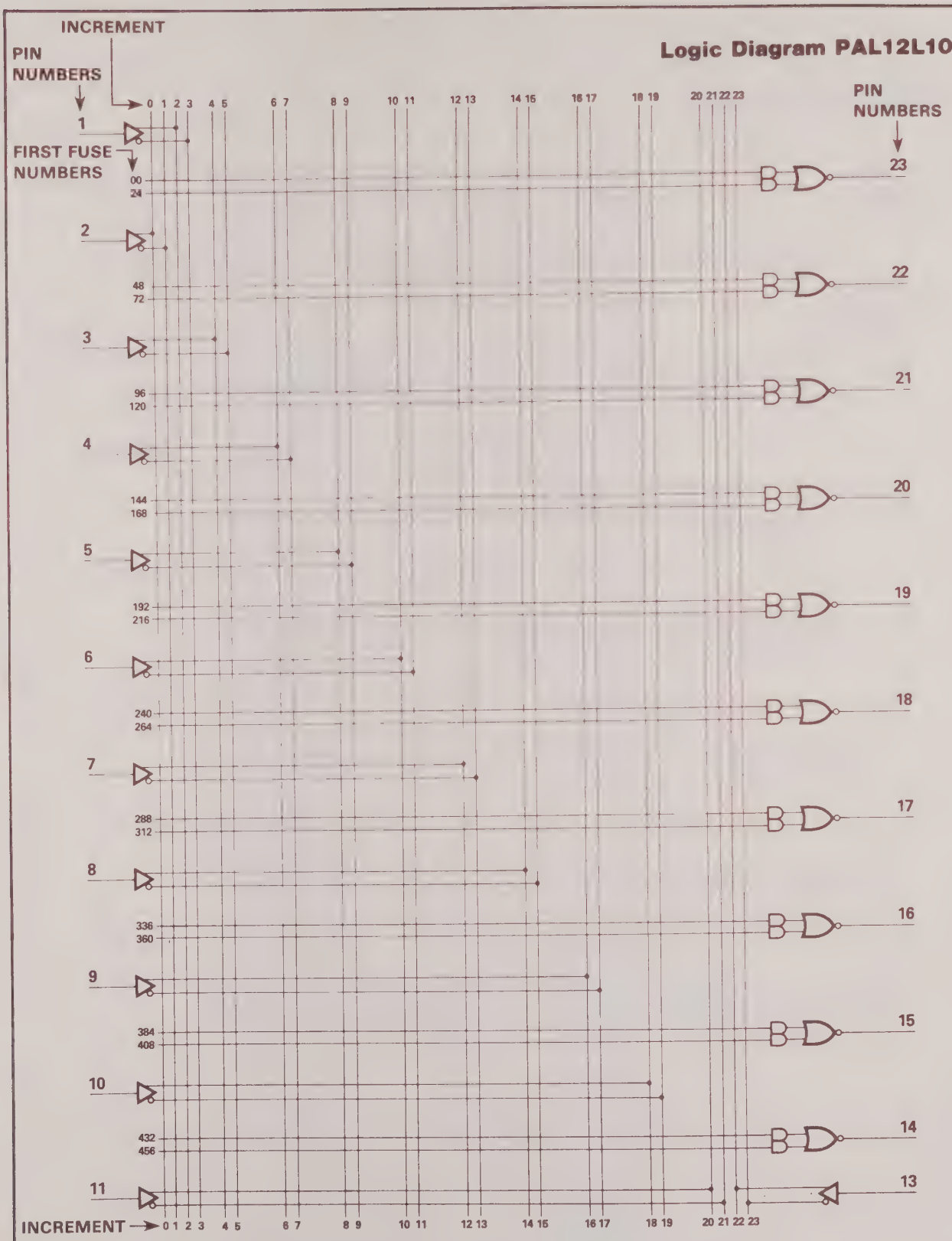
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL12L6



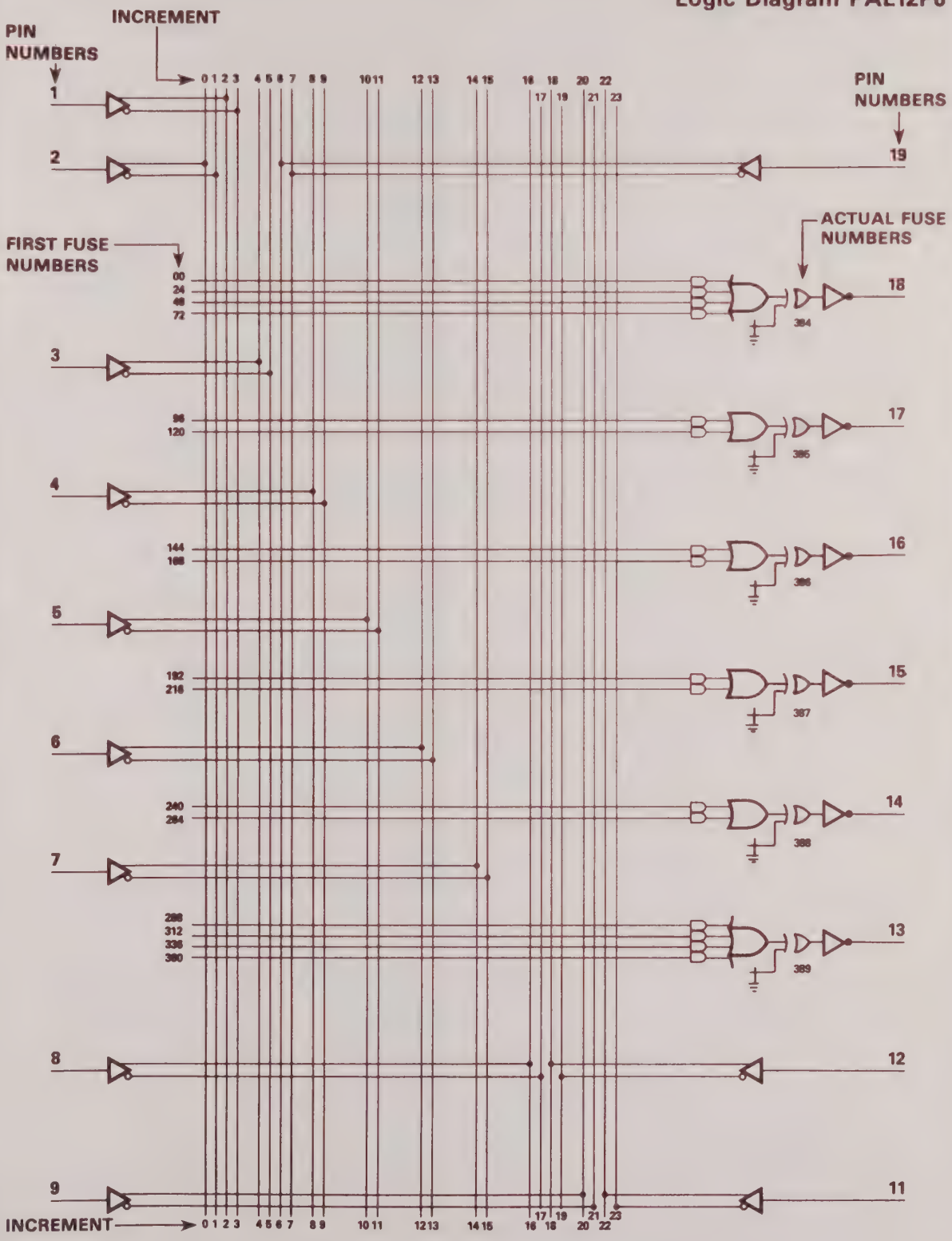
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL12L10



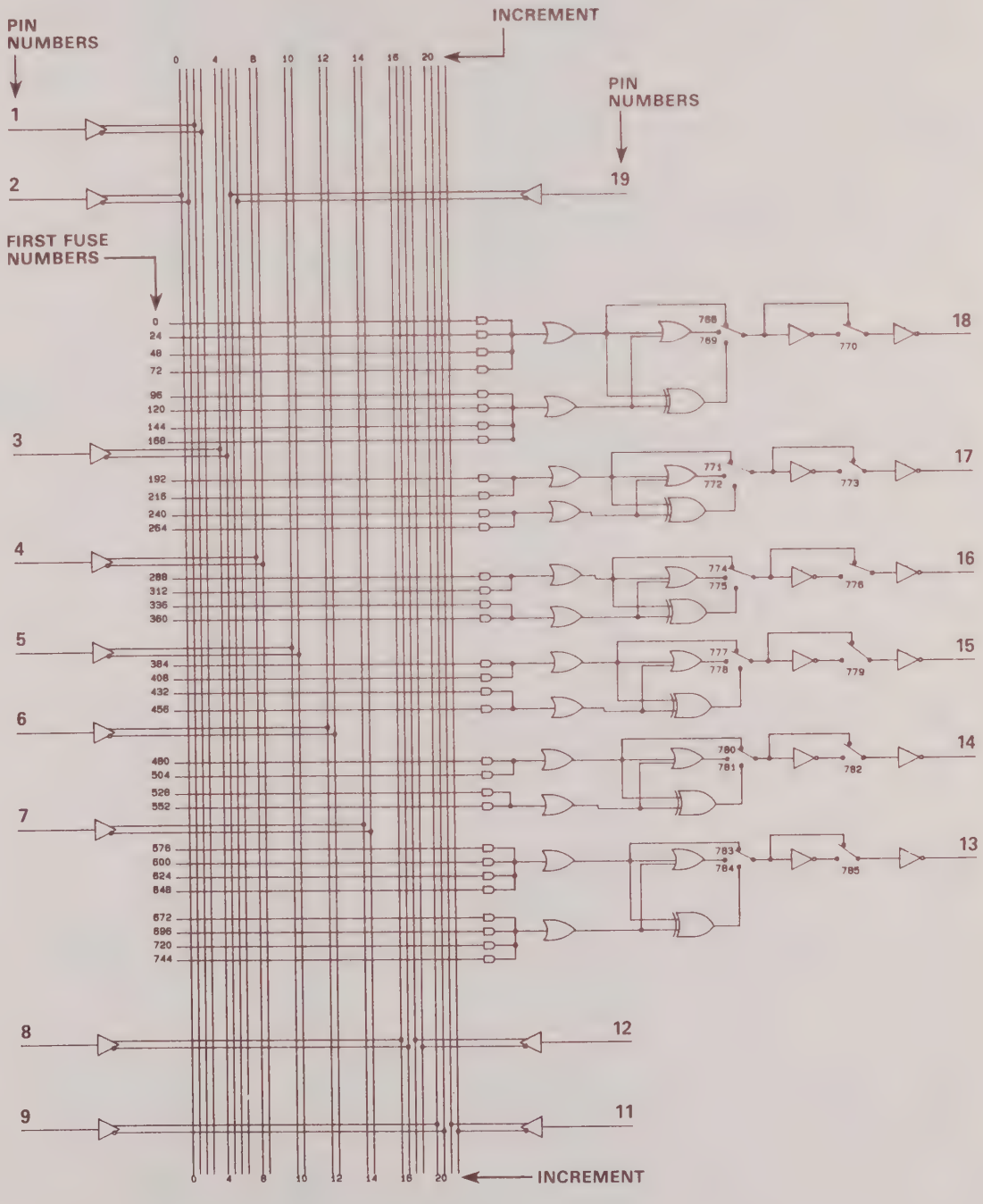
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL12P6



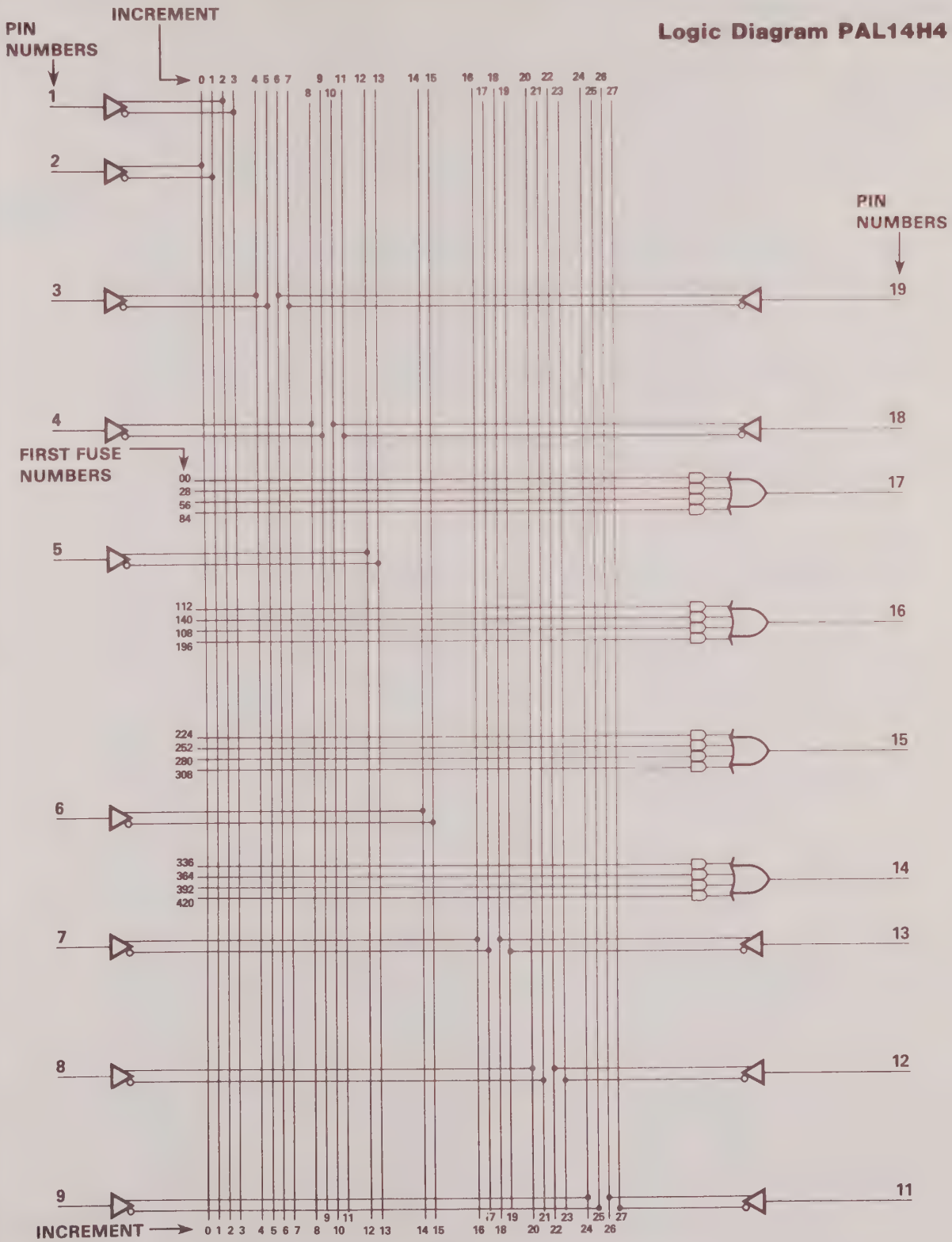
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram EPL12P6



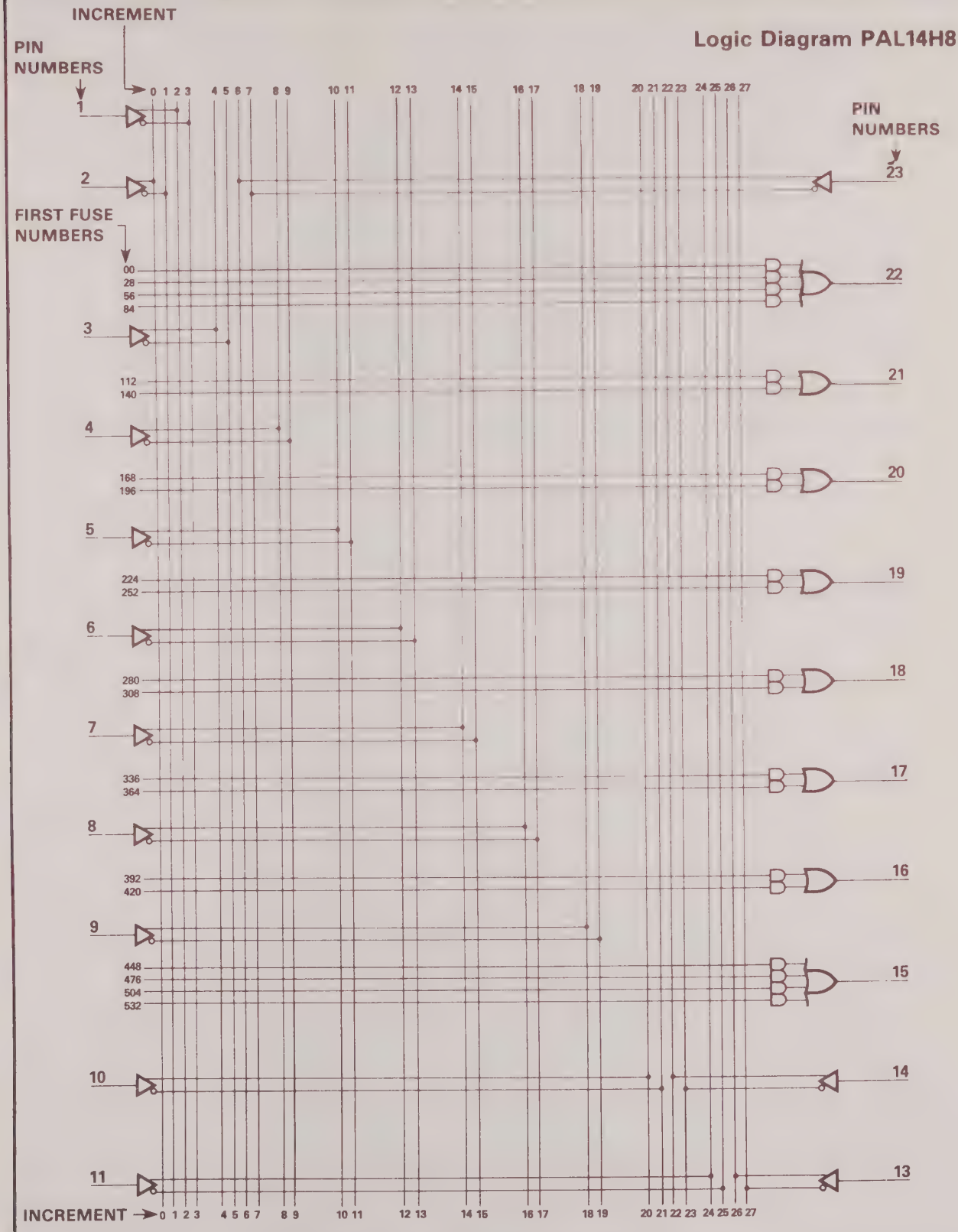
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL14H4

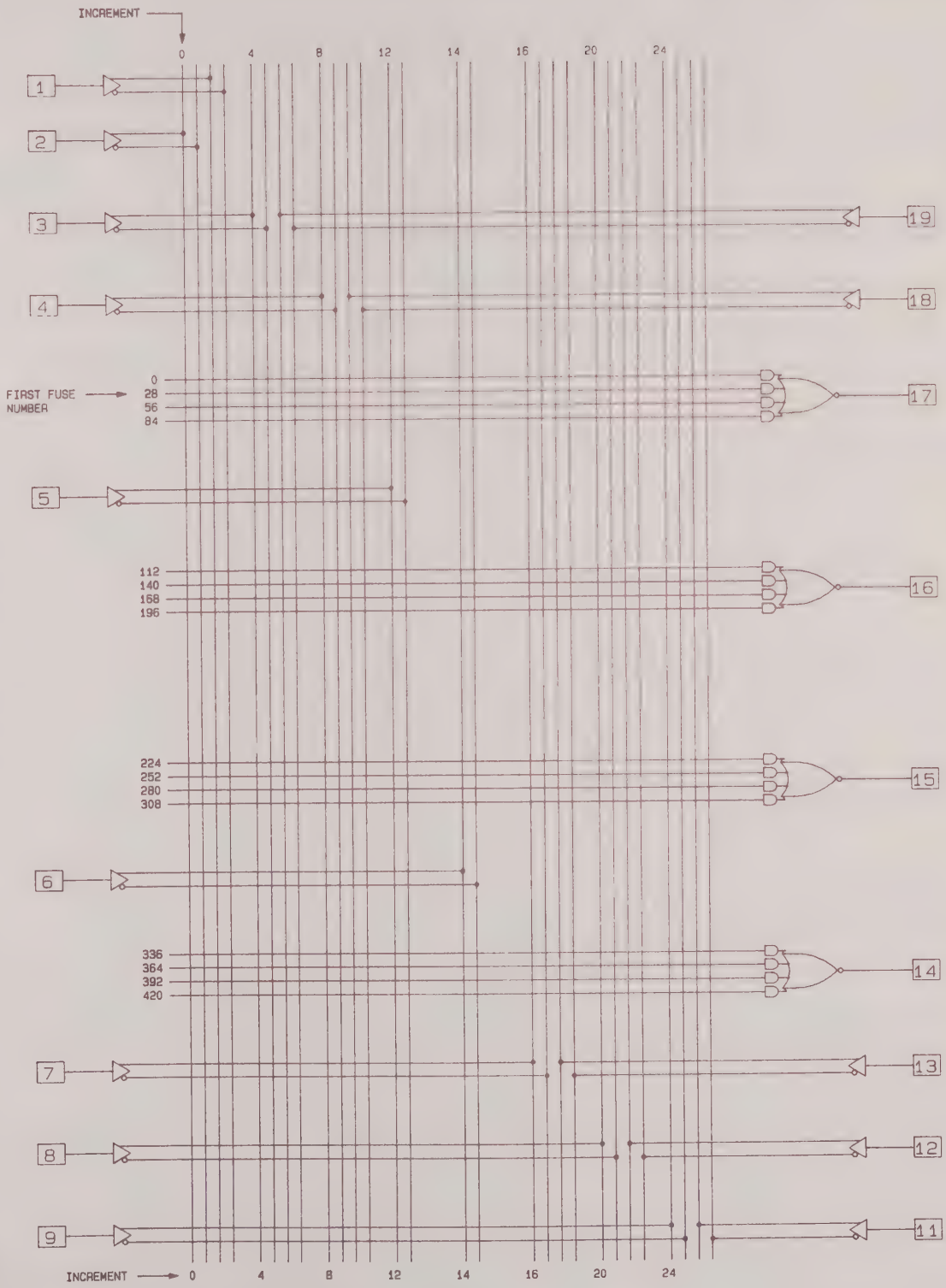


NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL14H8

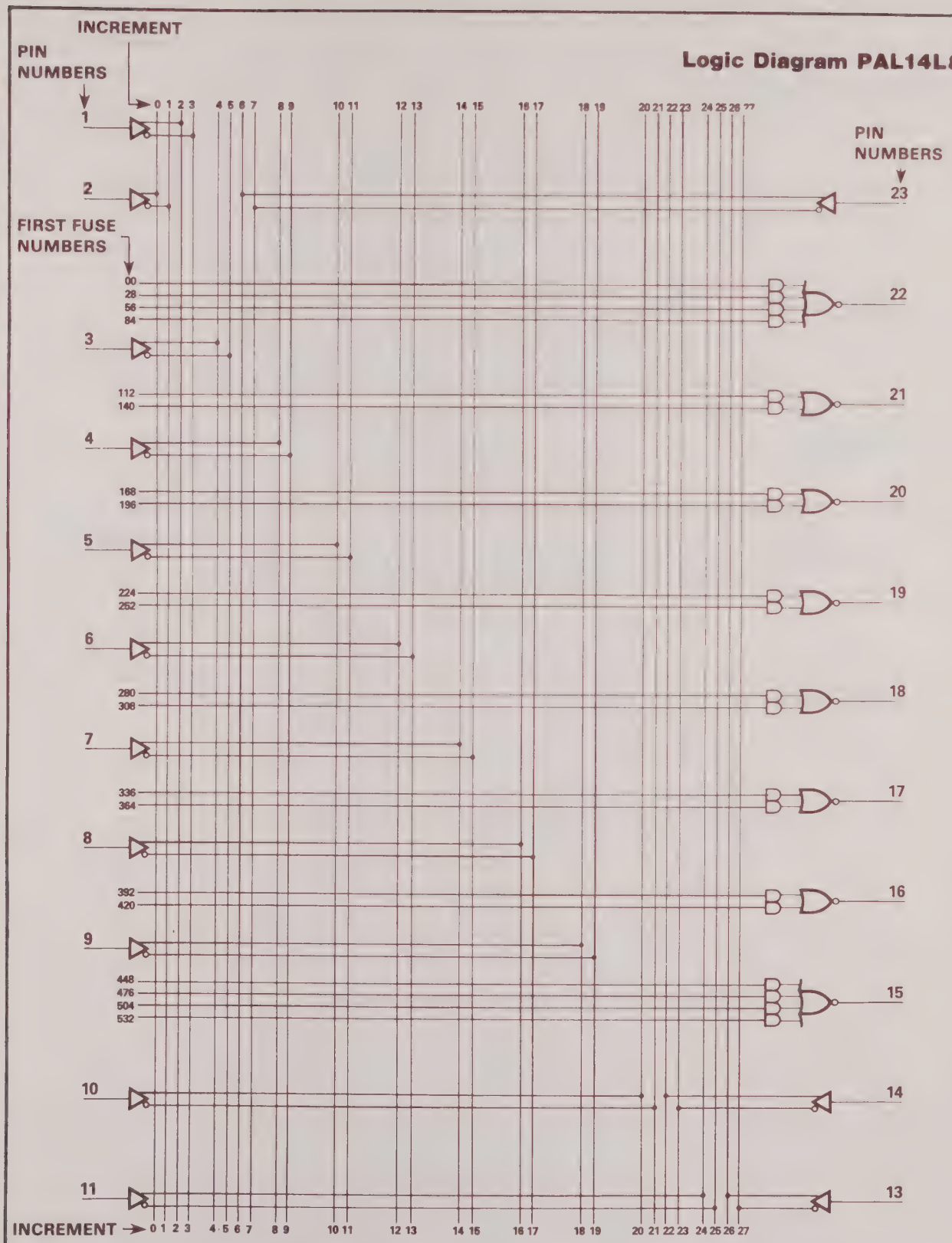


NOTE: Fuse Number = First Fuse Number + Increment



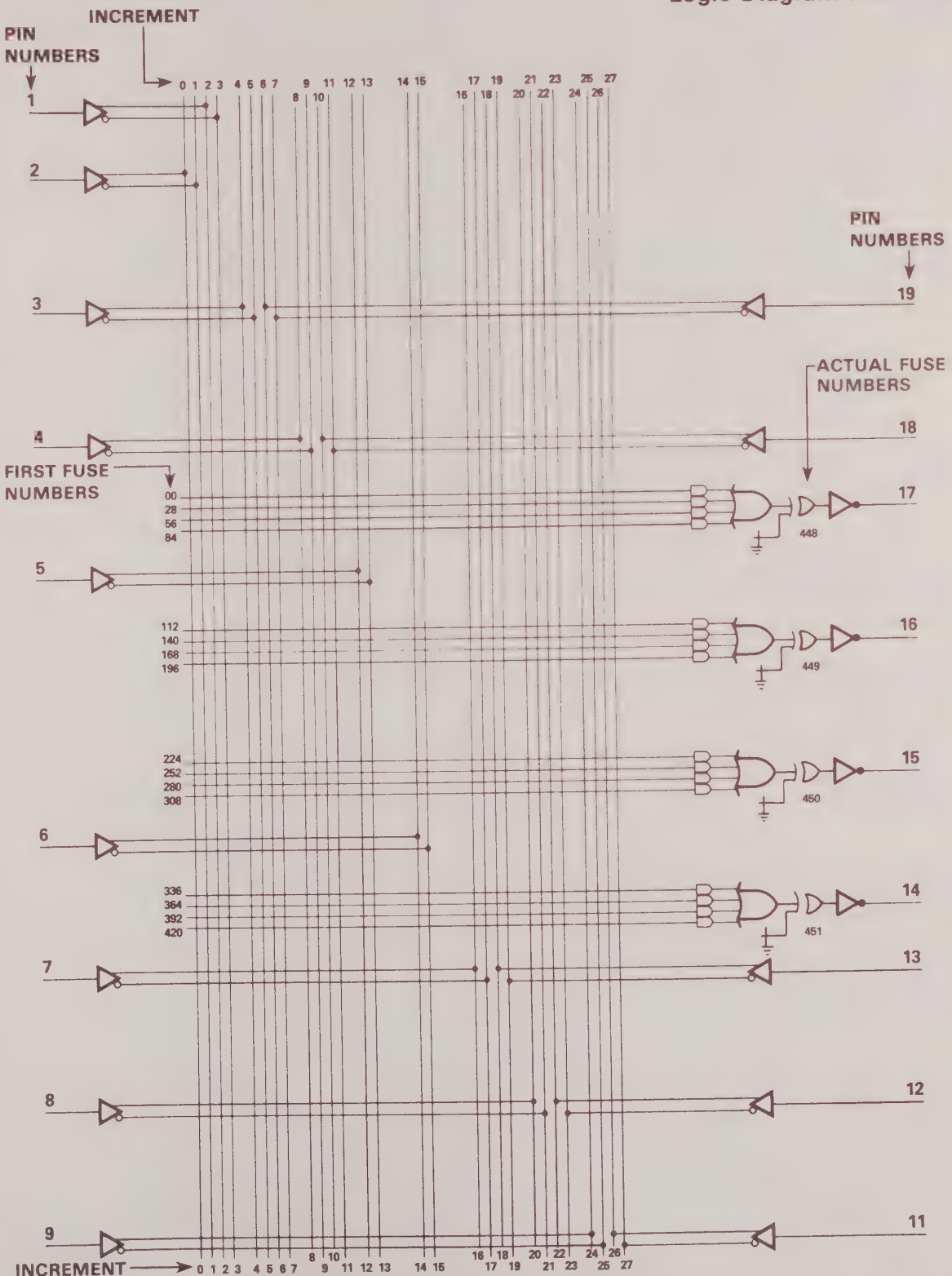
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL14L8



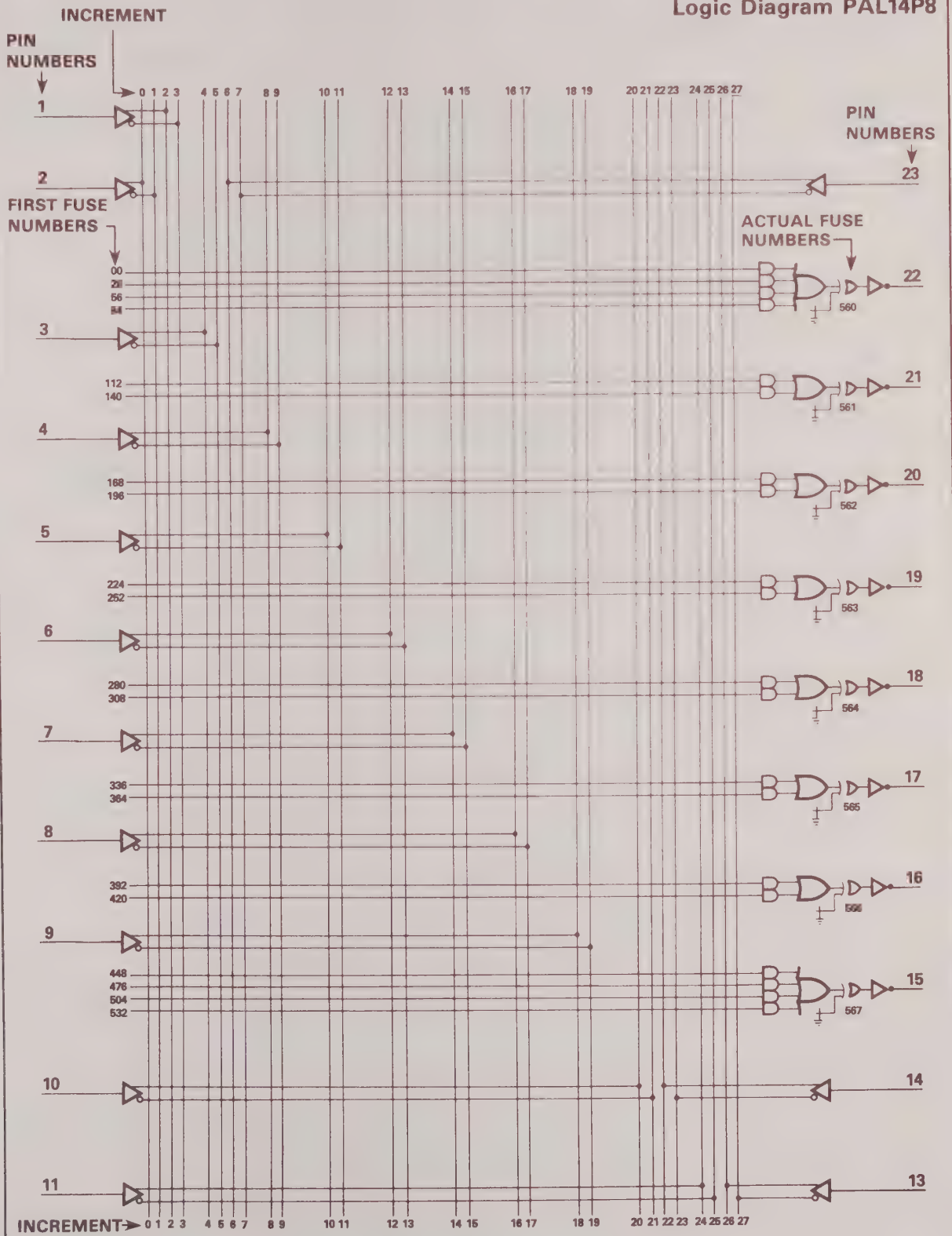
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL14P4



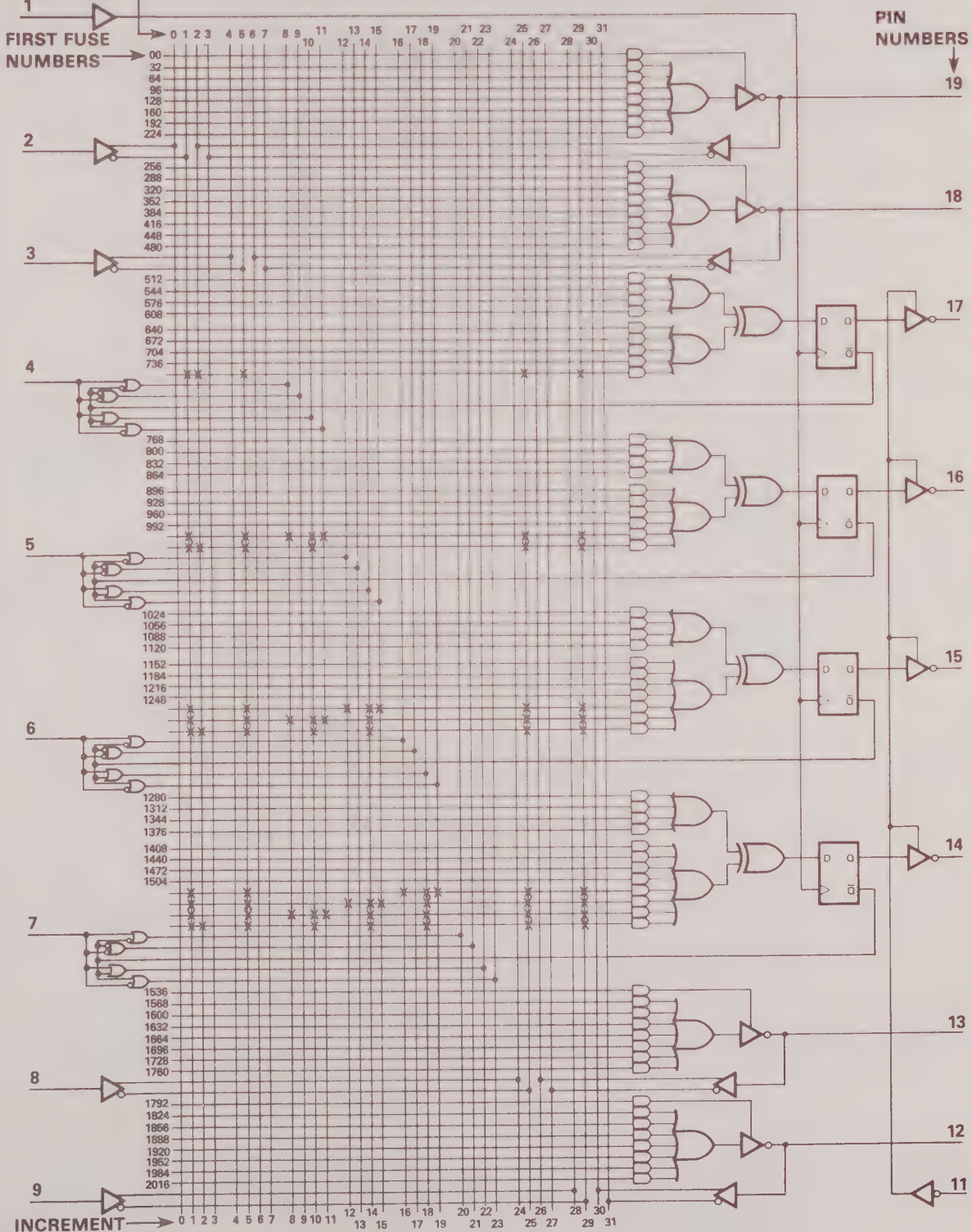
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL14P8



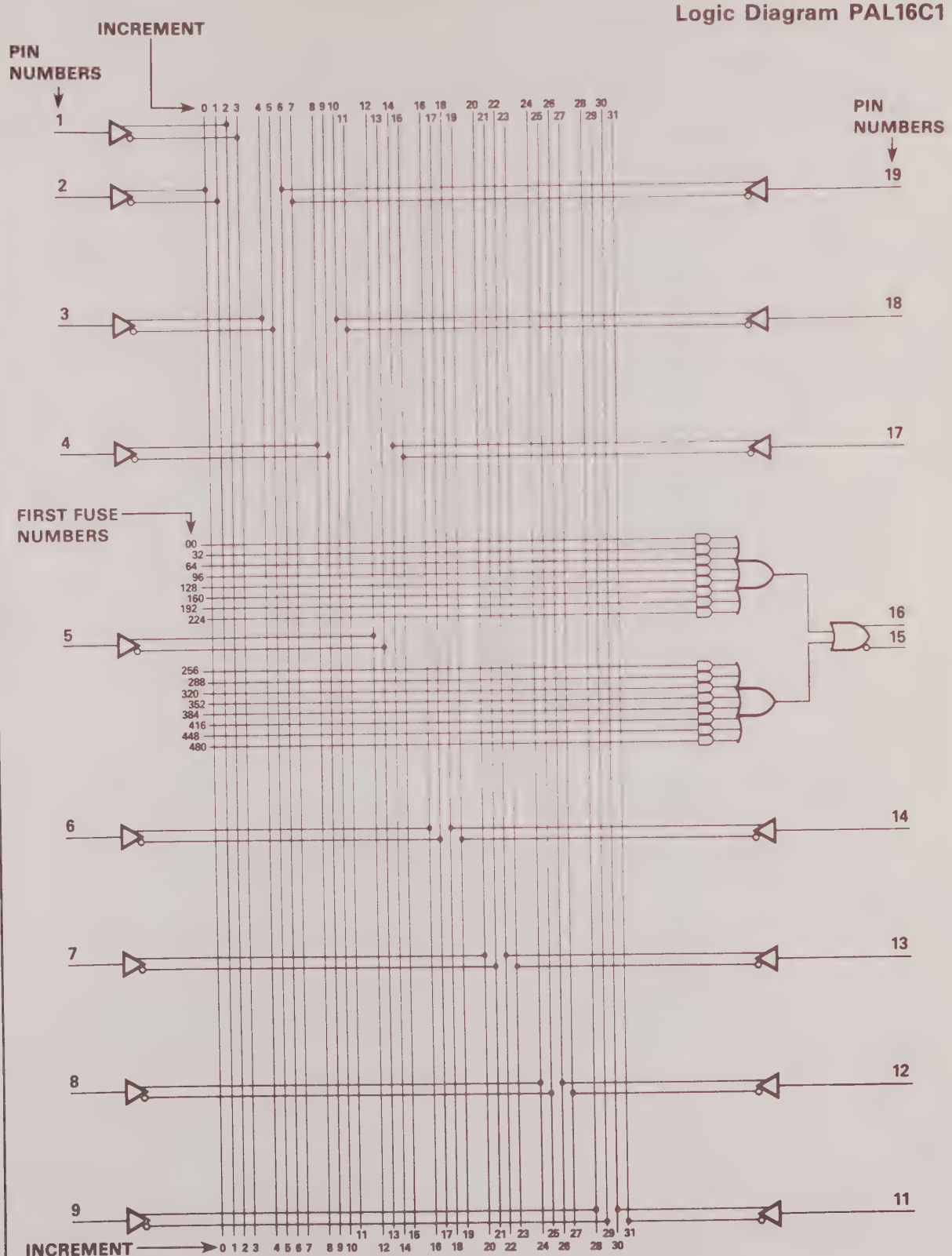
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL16A4

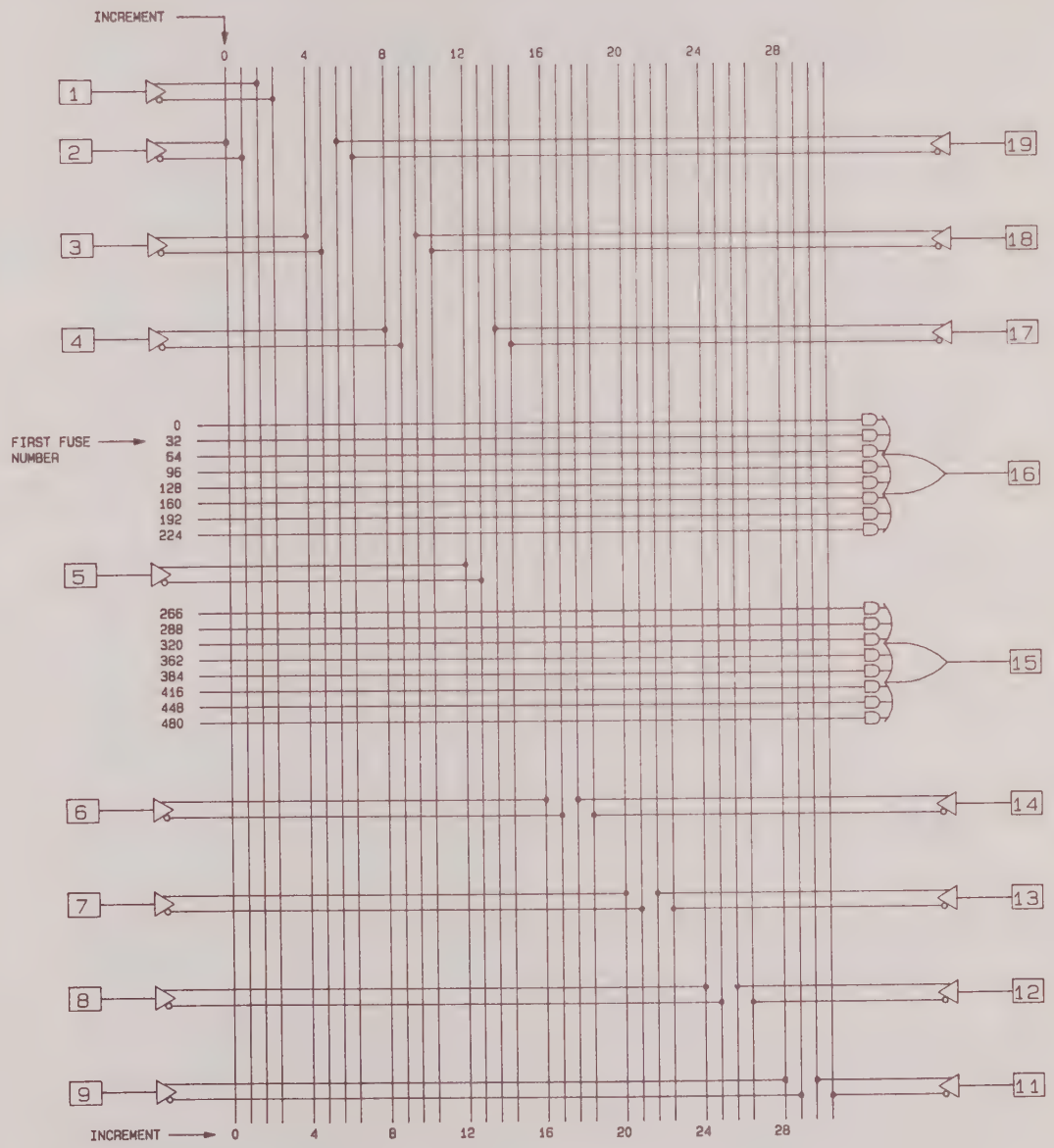


NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL16C1

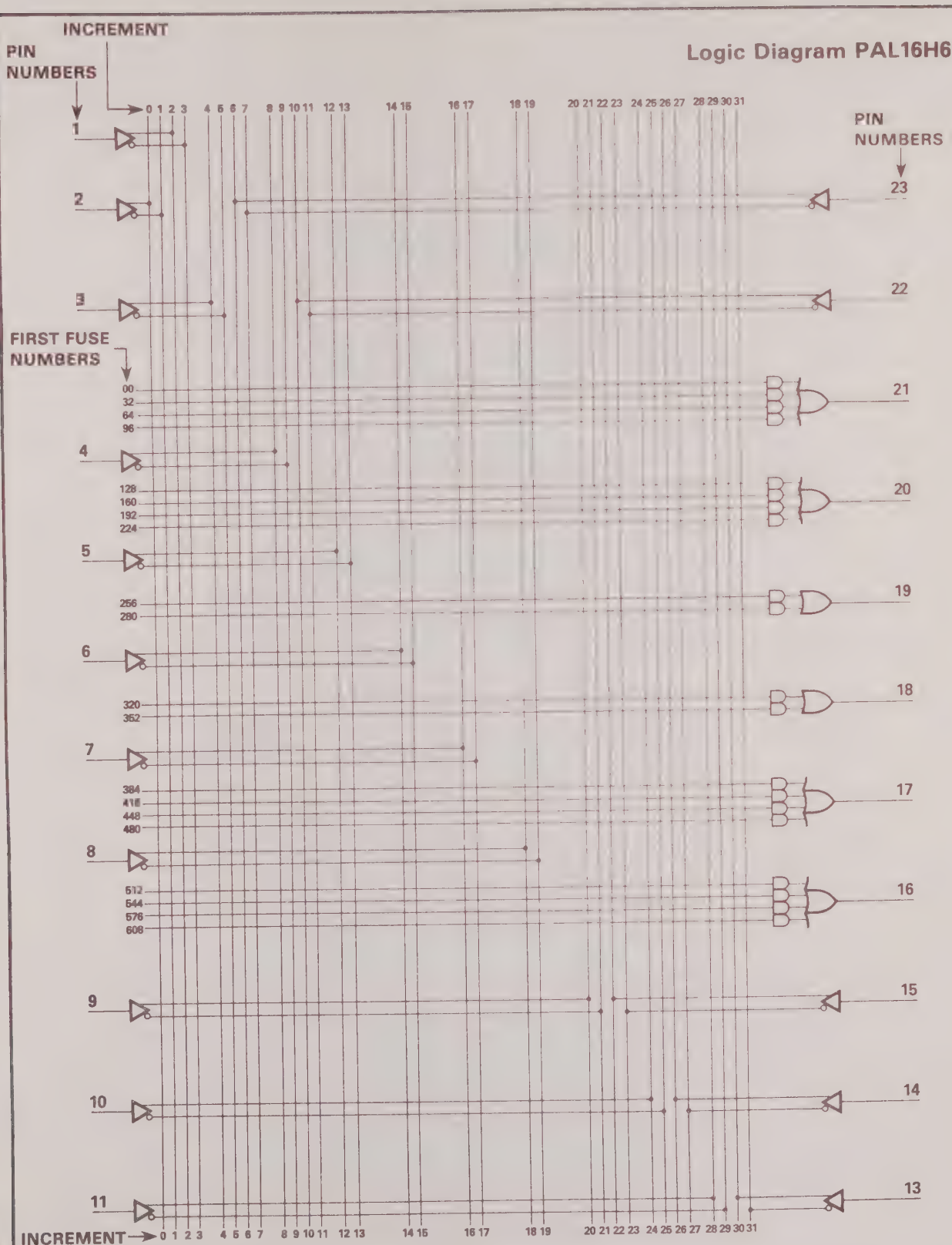


NOTE: Fuse Number = First Fuse Number + Increment



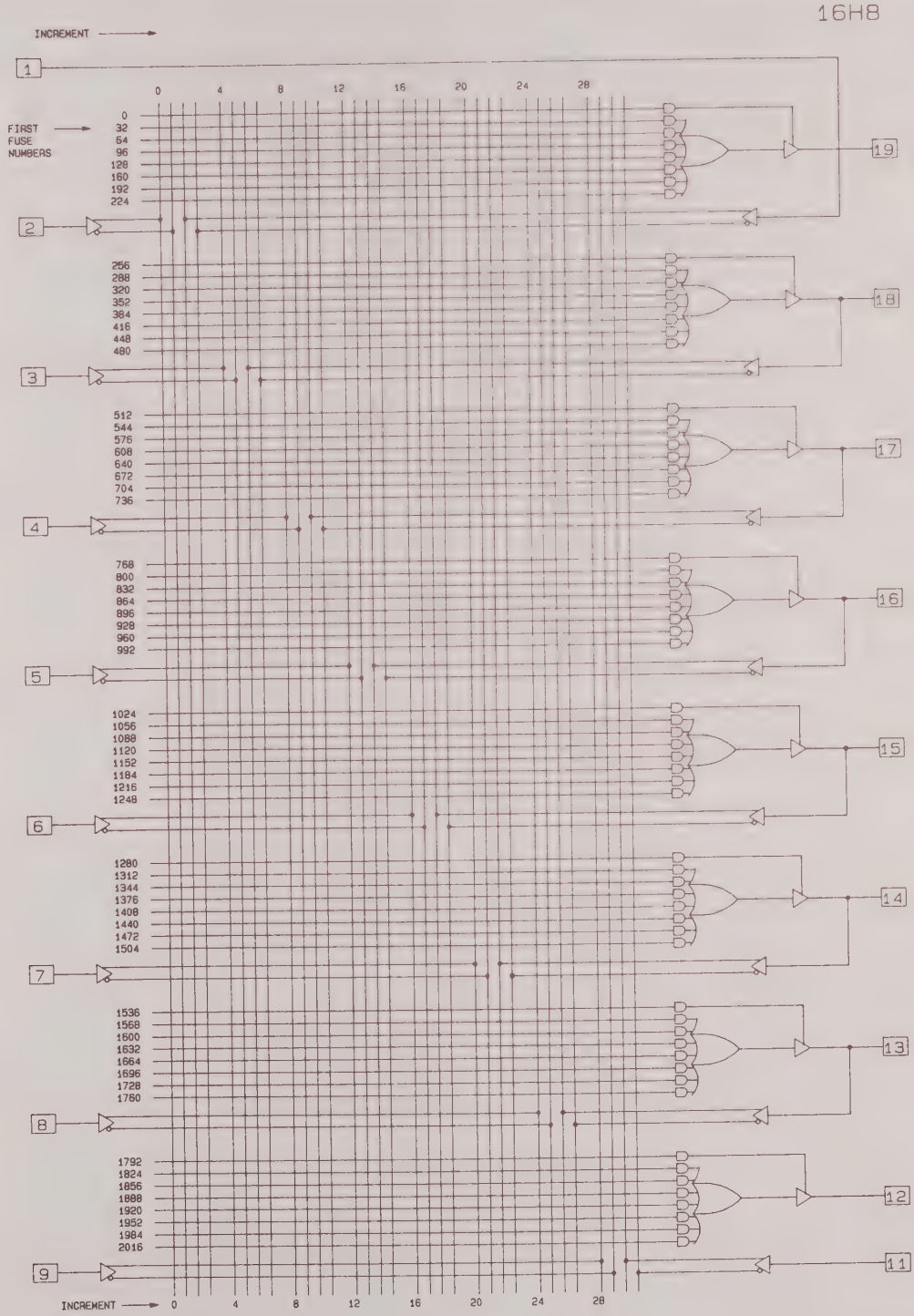
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL16H6



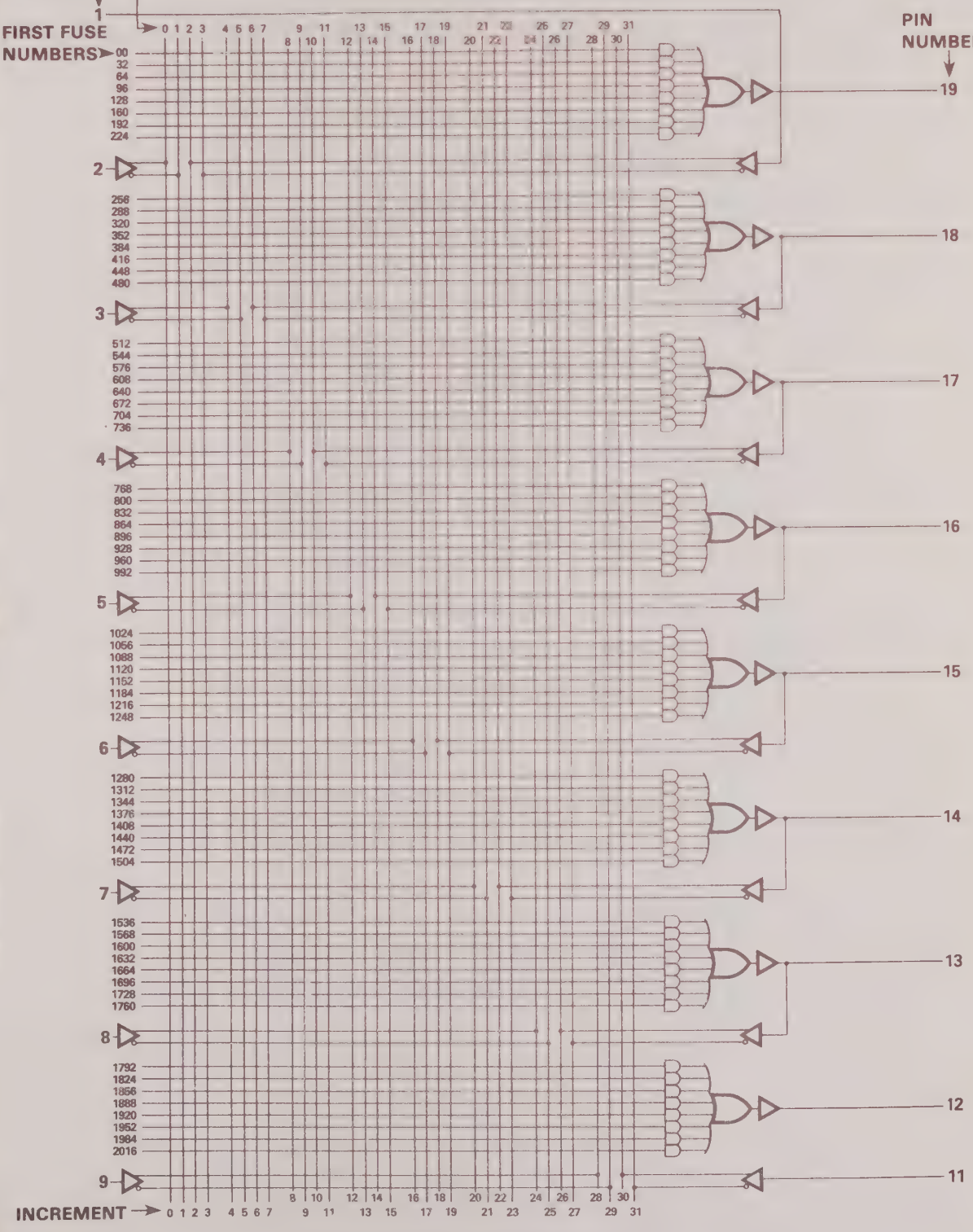
NOTE: Fuse Number = First Fuse Number + Increment

16H8

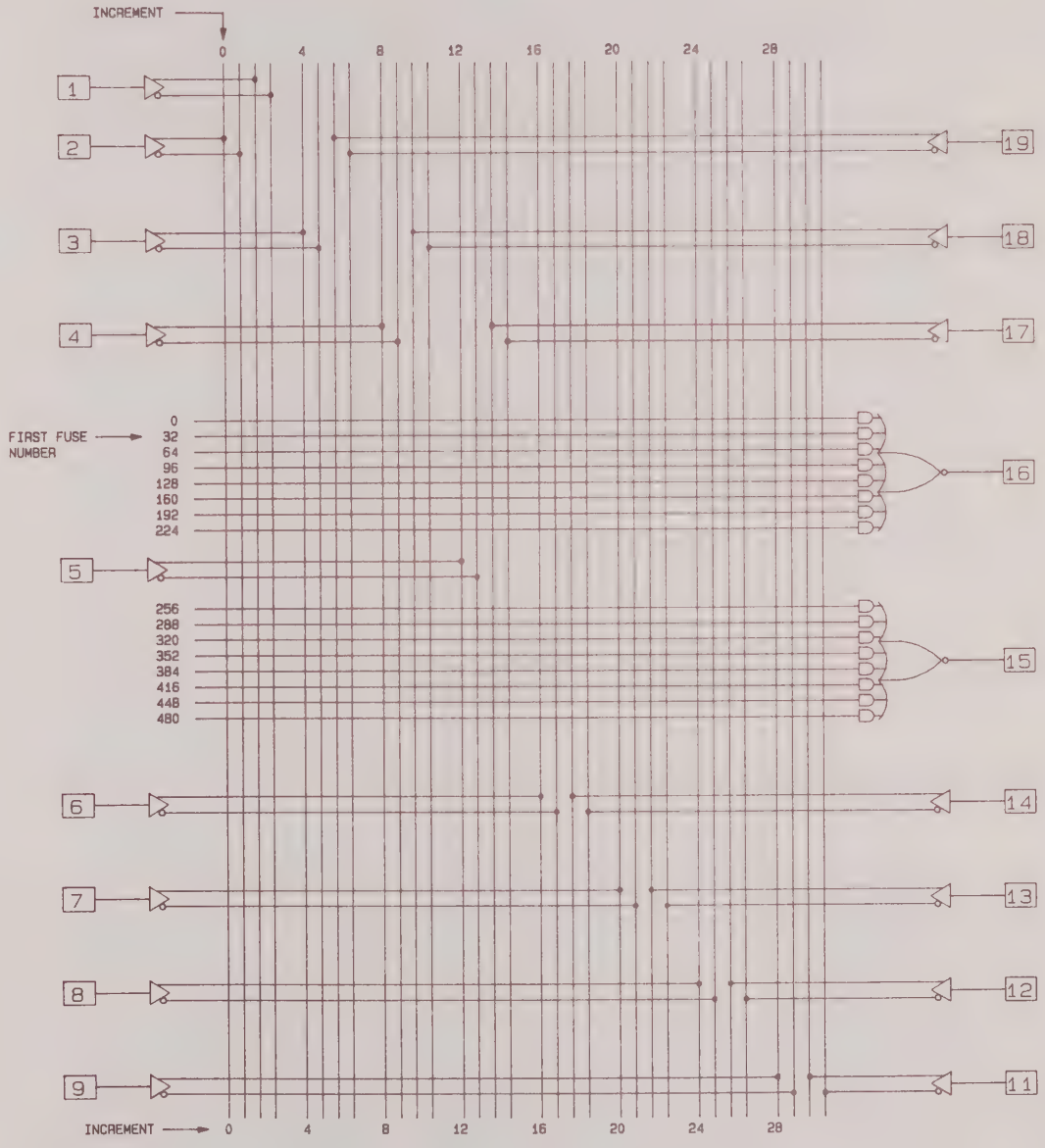


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL16HD8

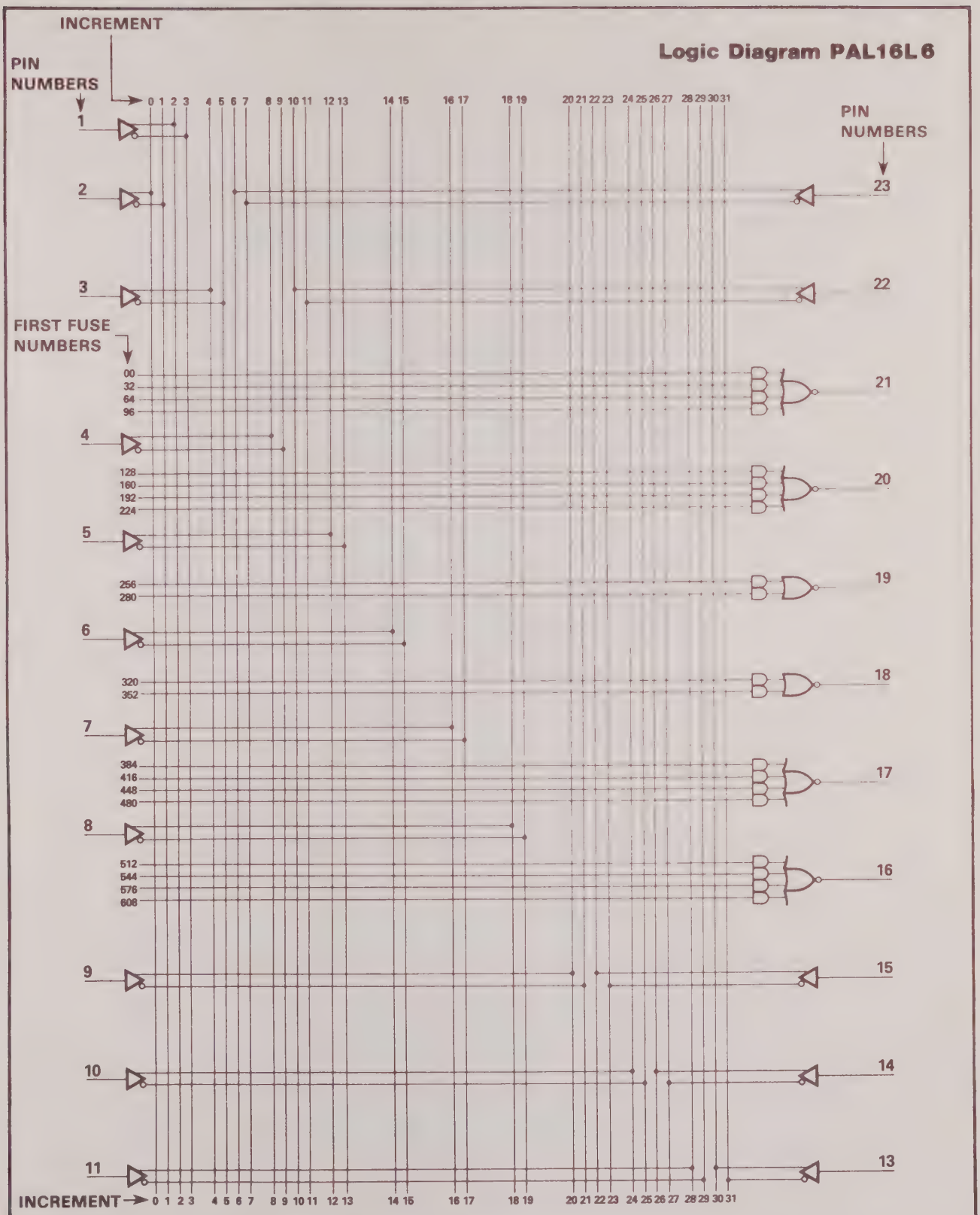


NOTE: Fuse Number = First Fuse Number + Increment

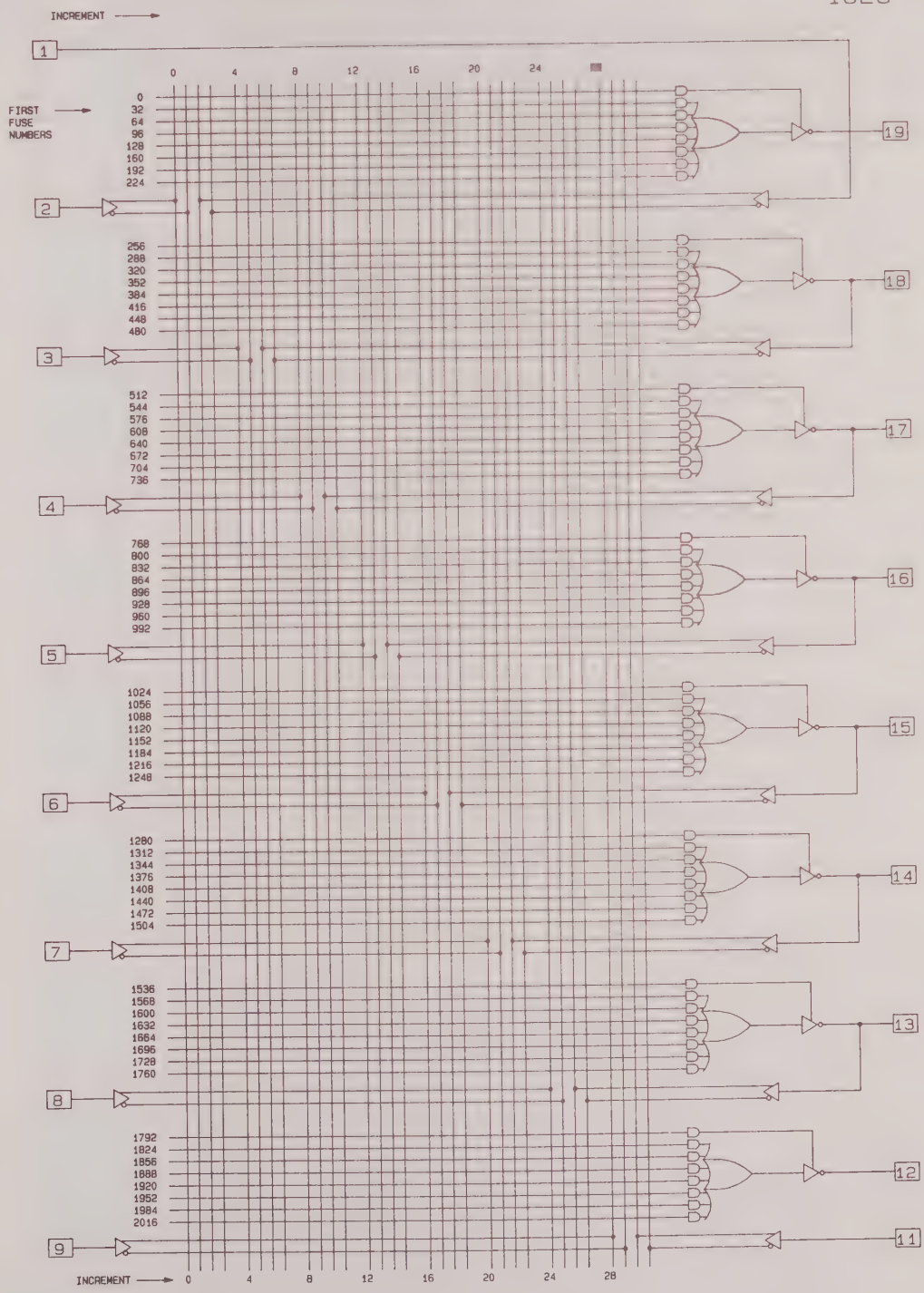


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL16L6

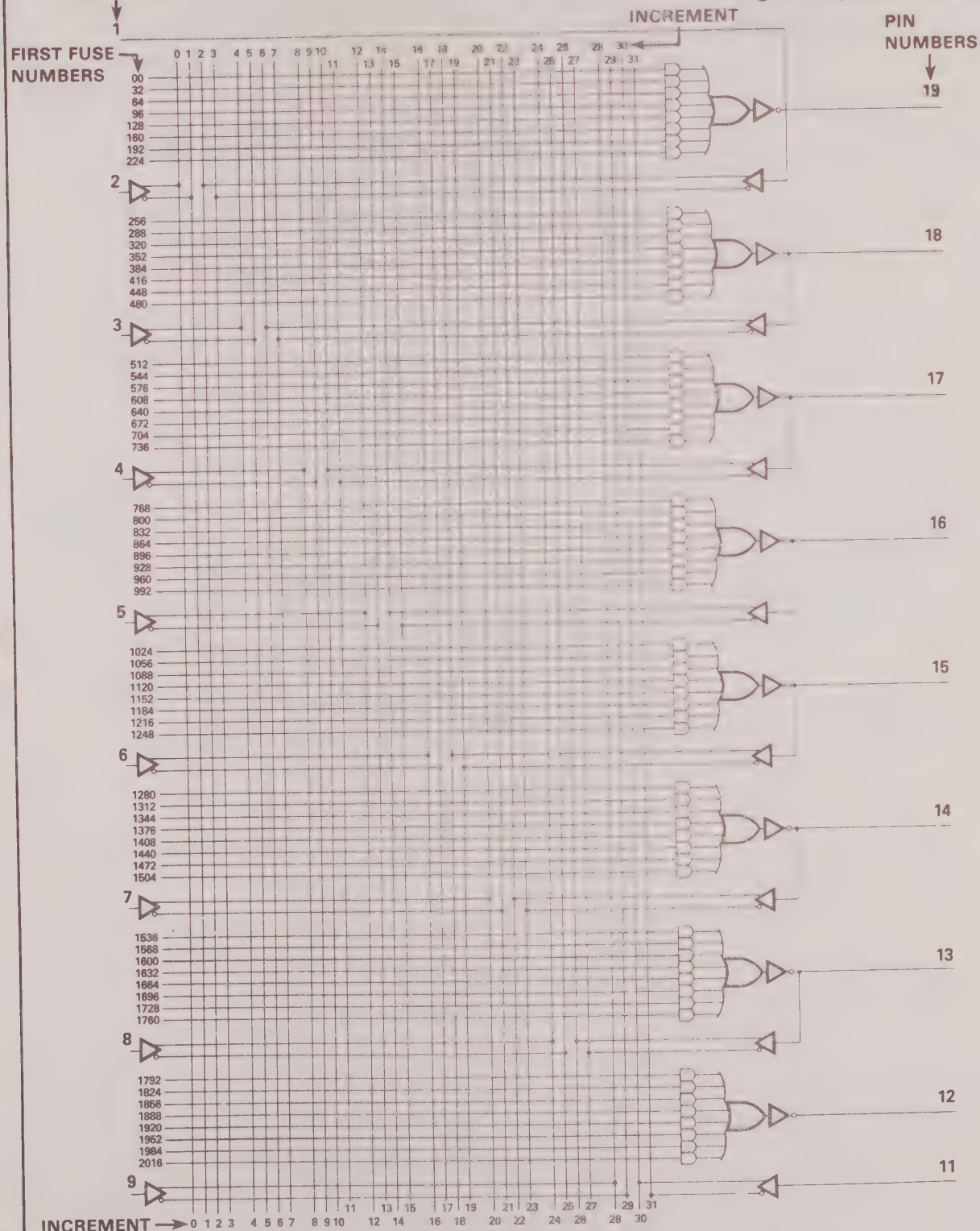


NOTE: Fuse Number = First Fuse Number + Increment



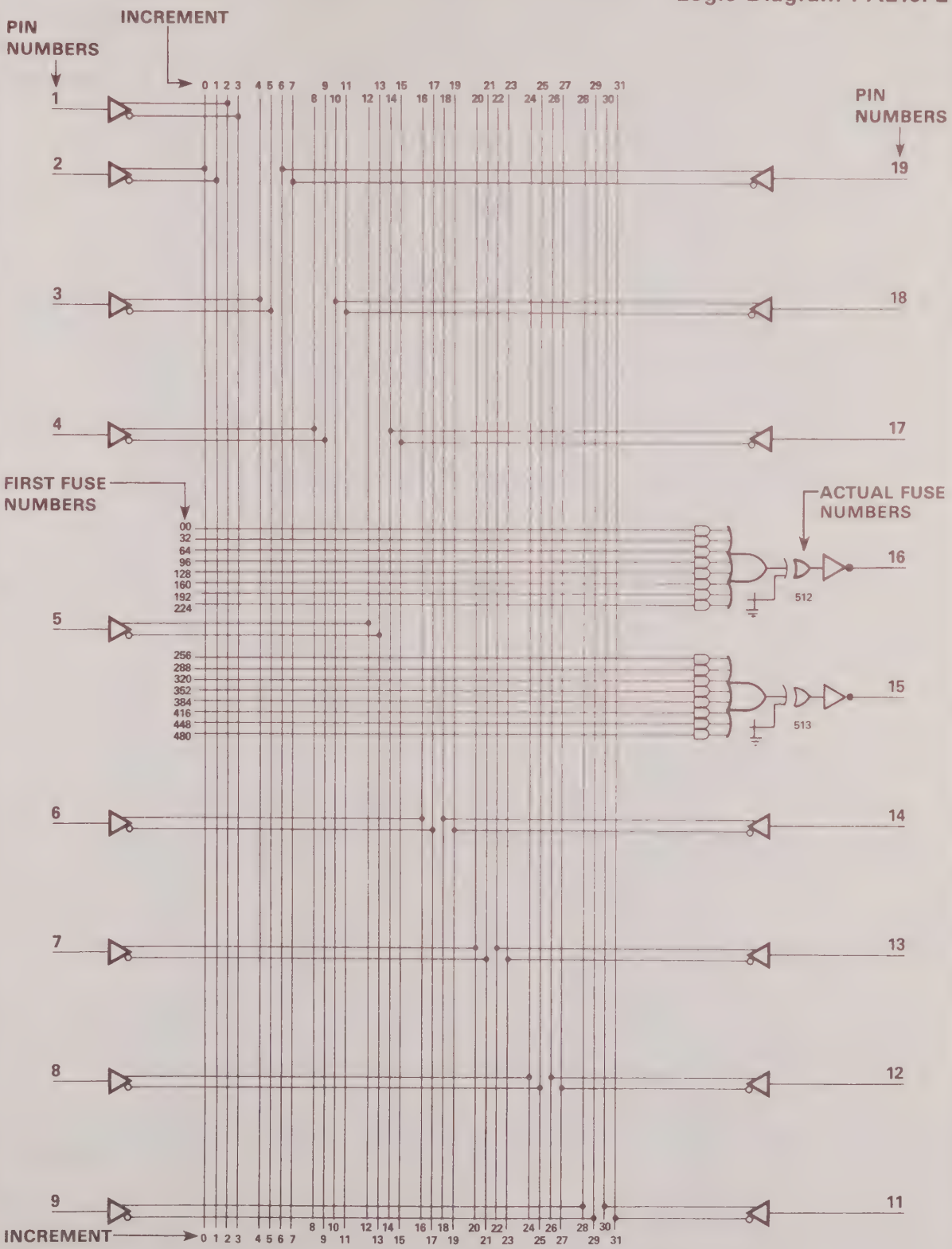
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL16LD8



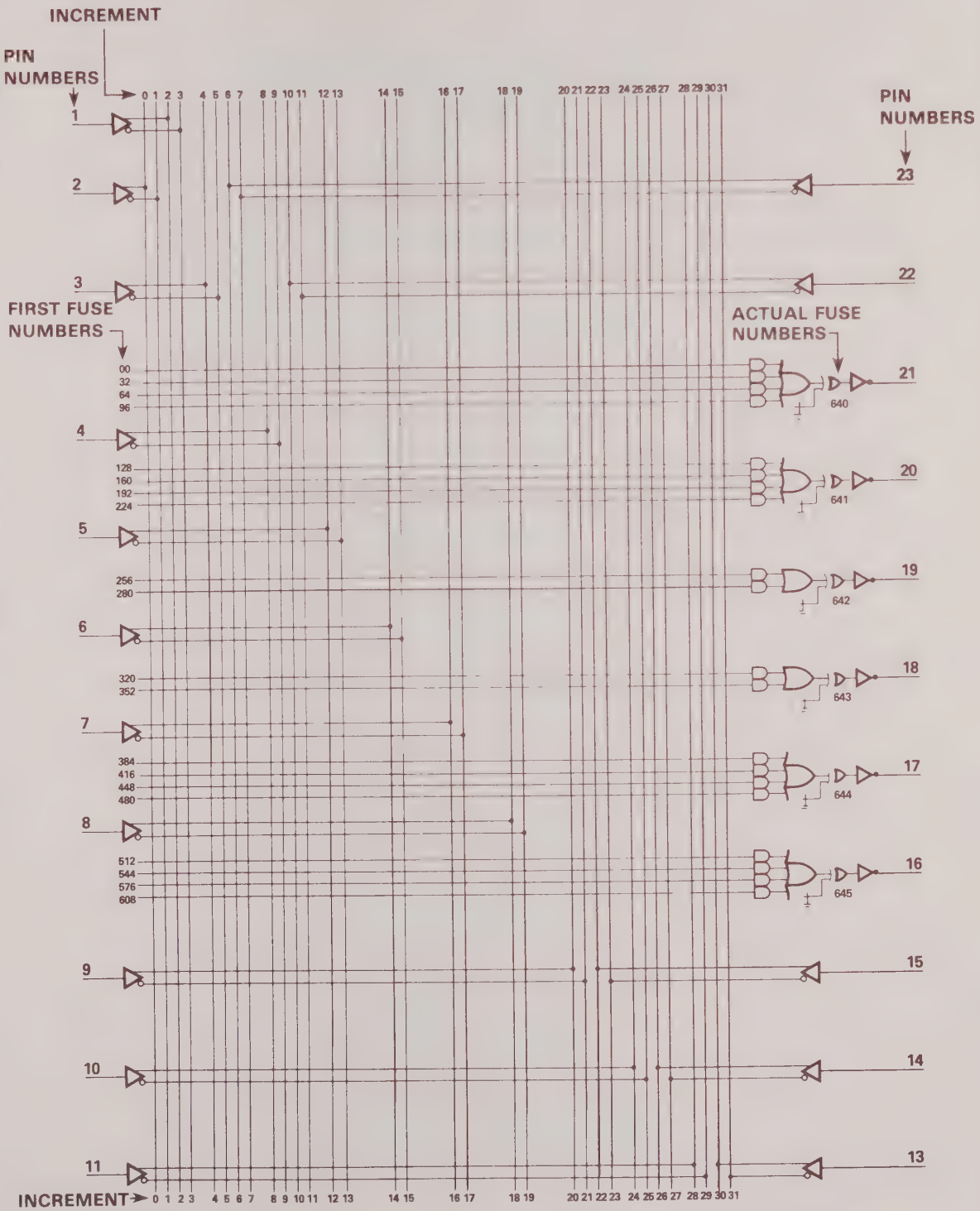
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL16P2

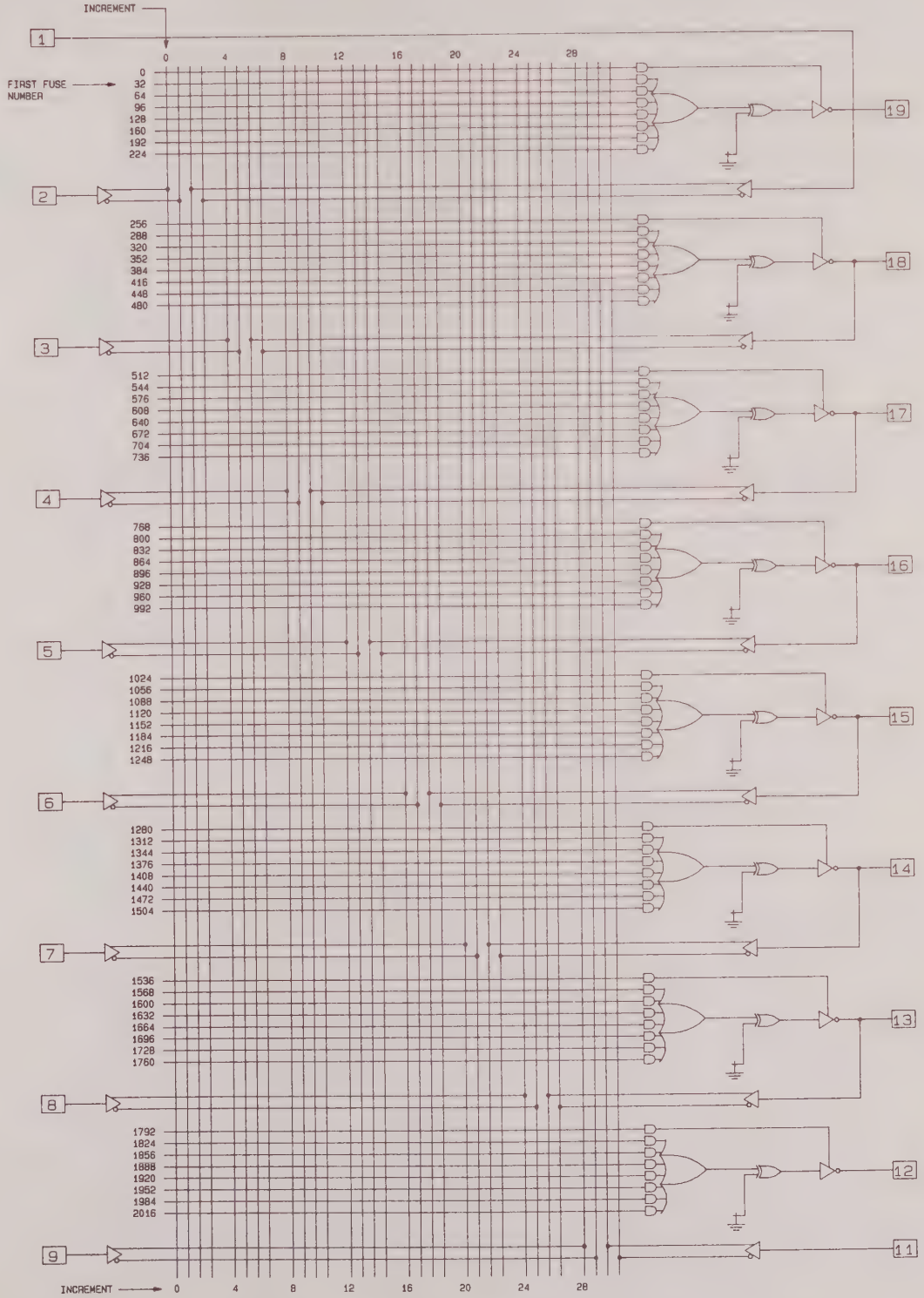


NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL16P6

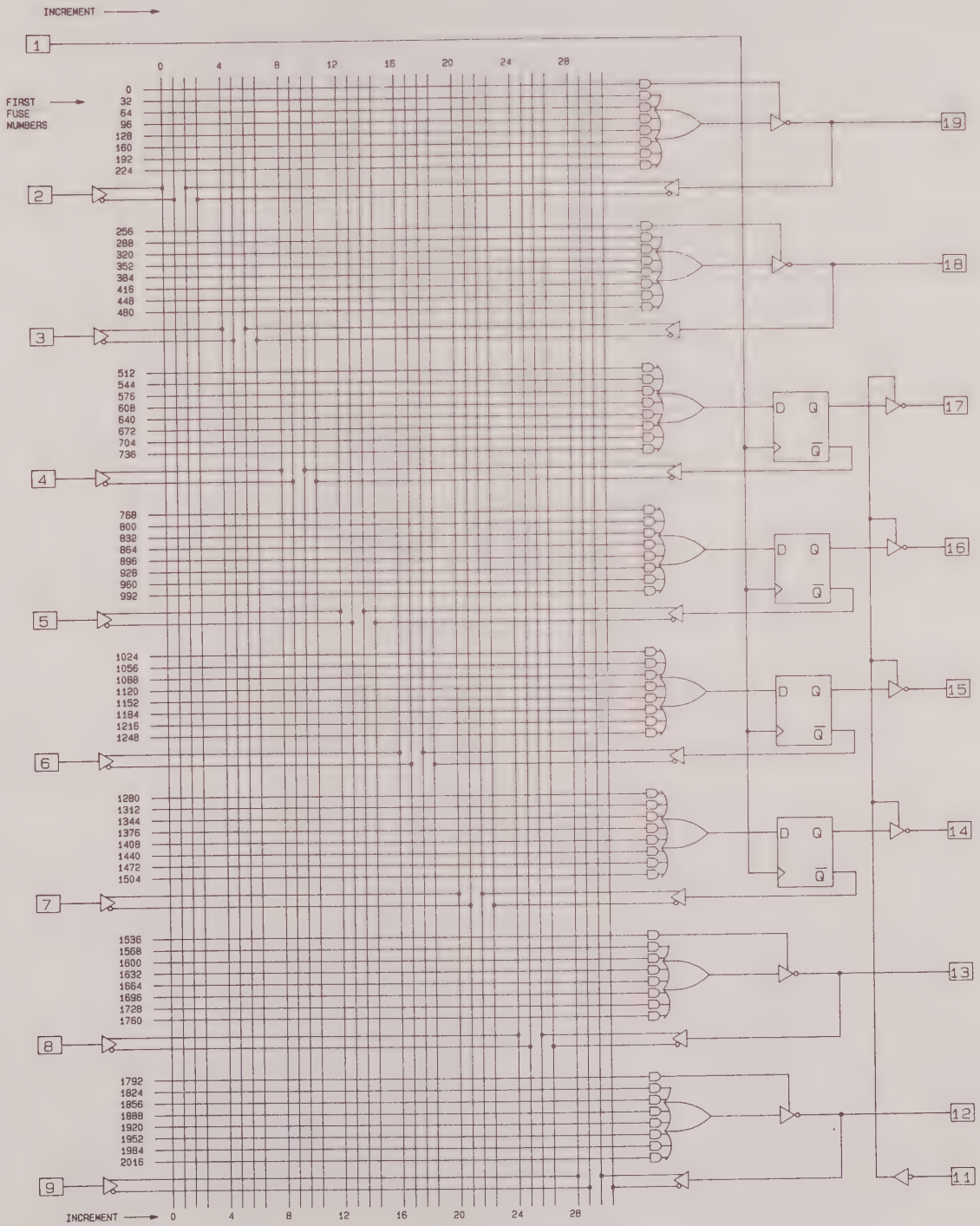


NOTE: Fuse Number = First Fuse Number + Increment



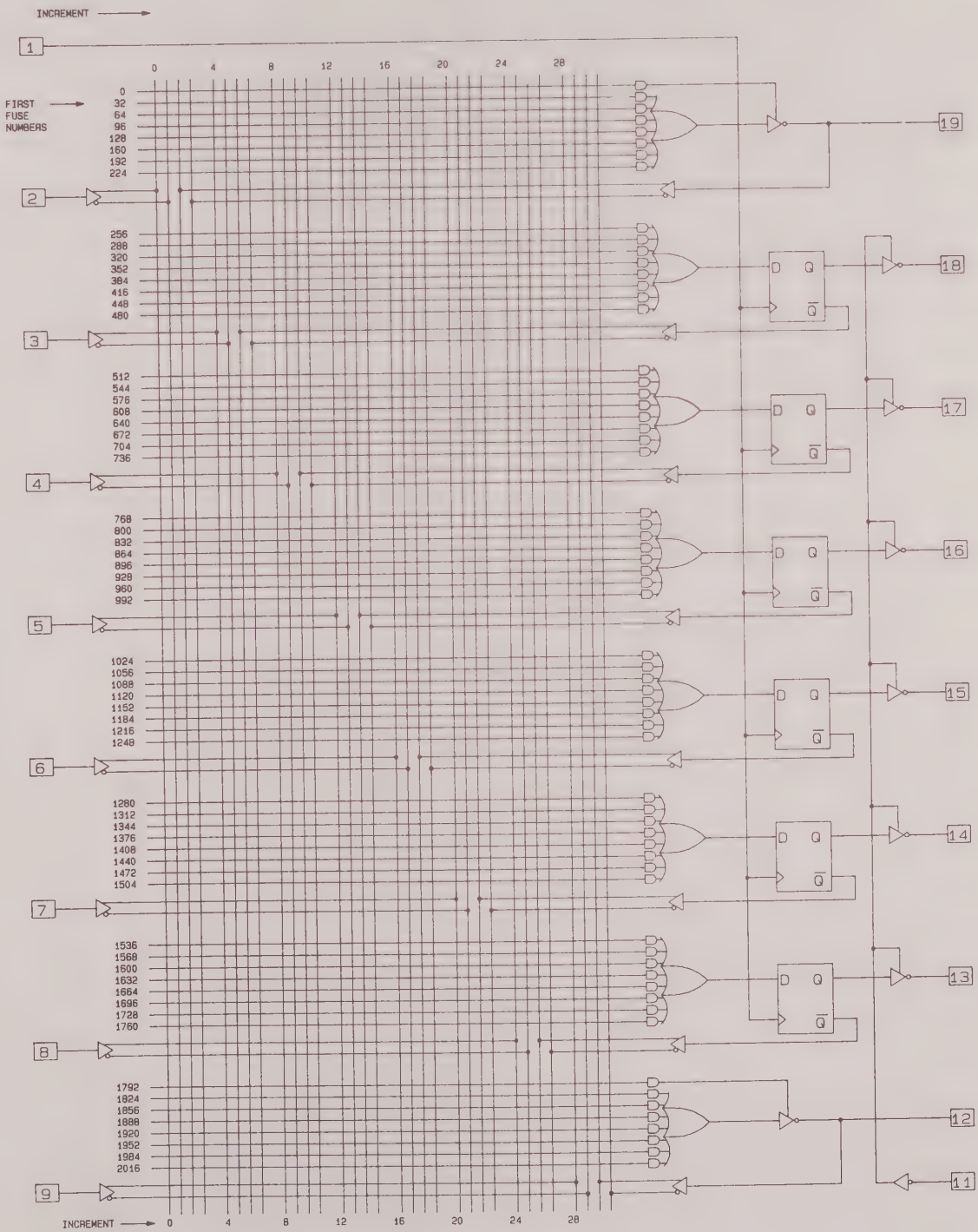
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

16R4

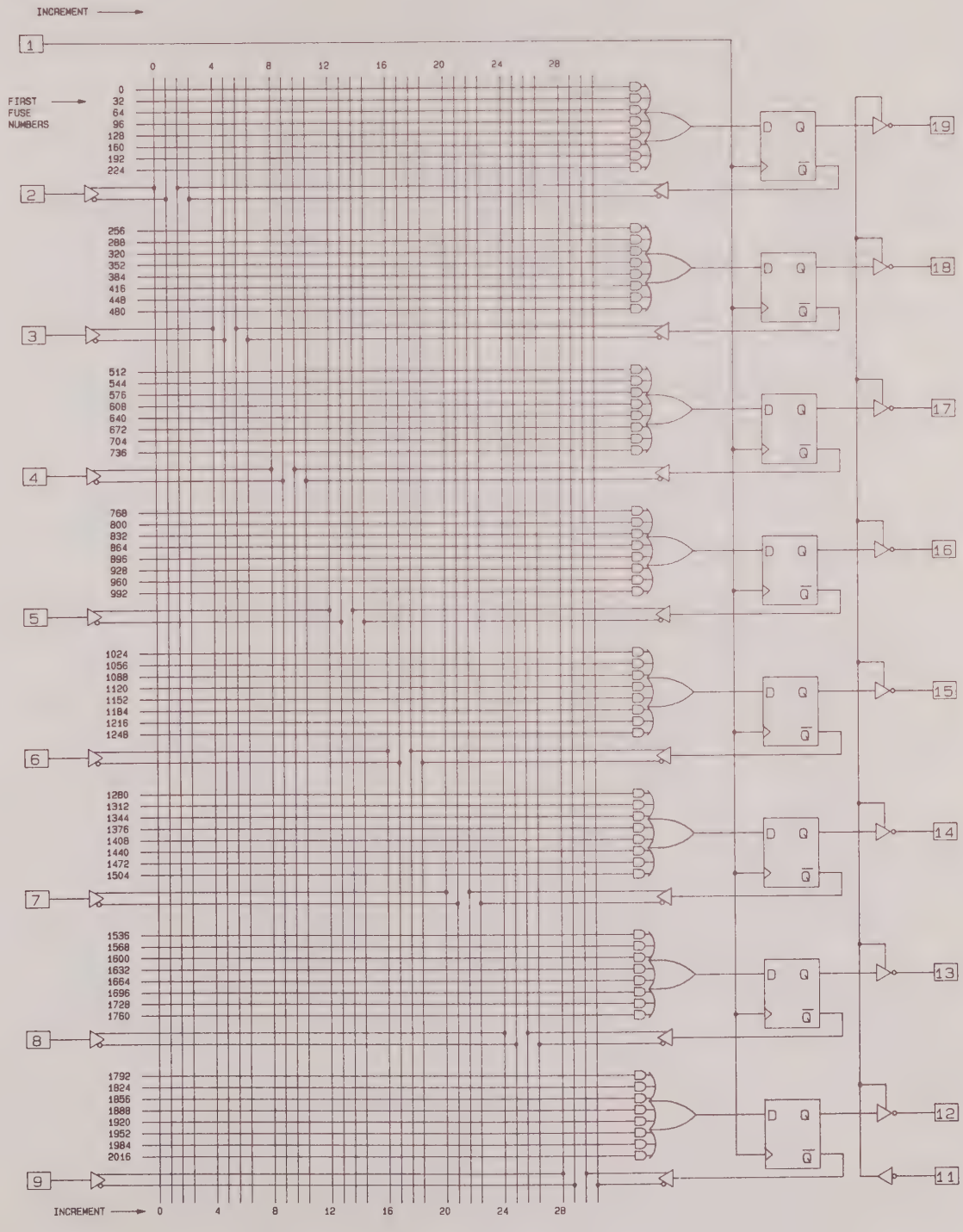


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

34-101-0002

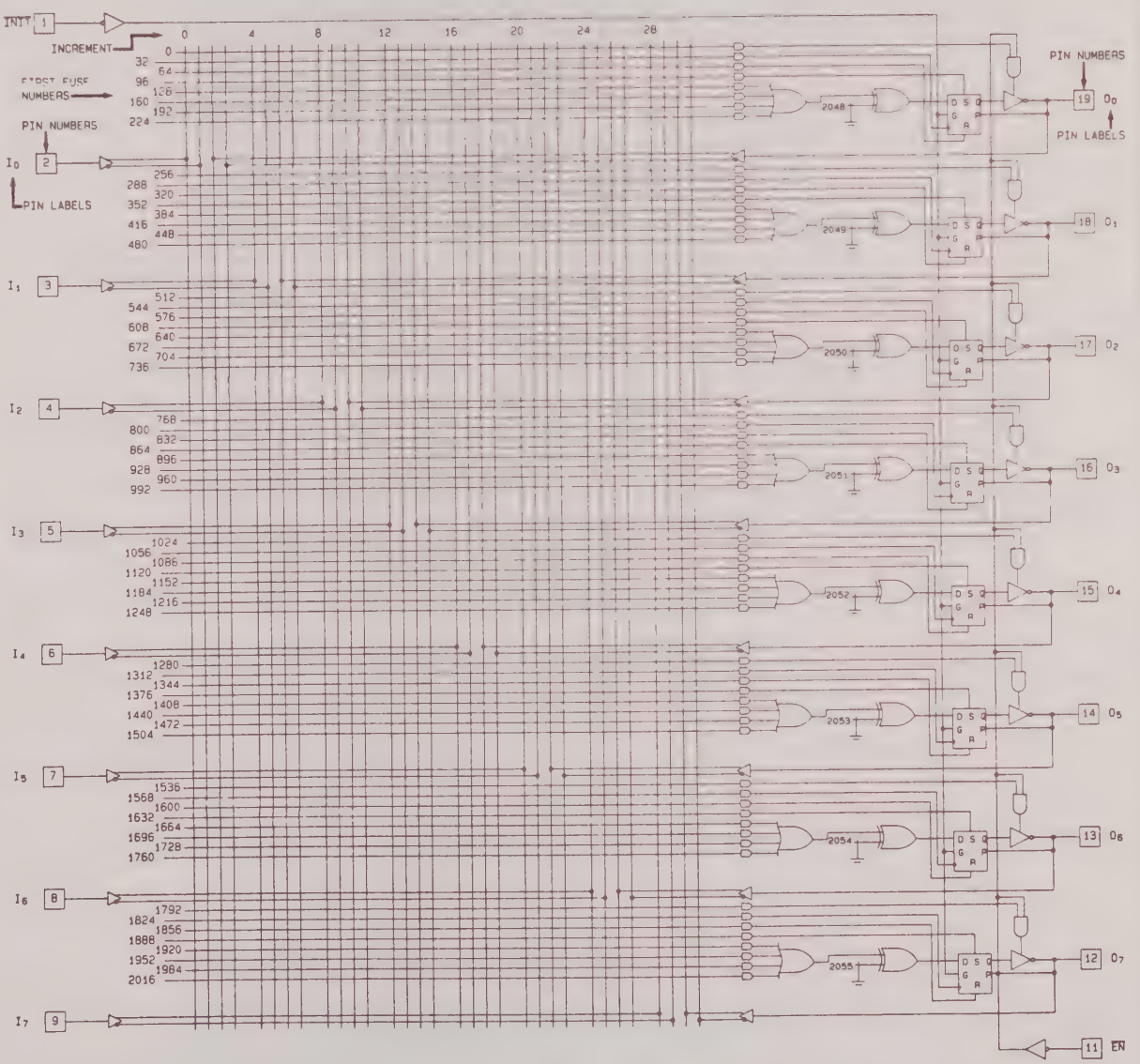


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT



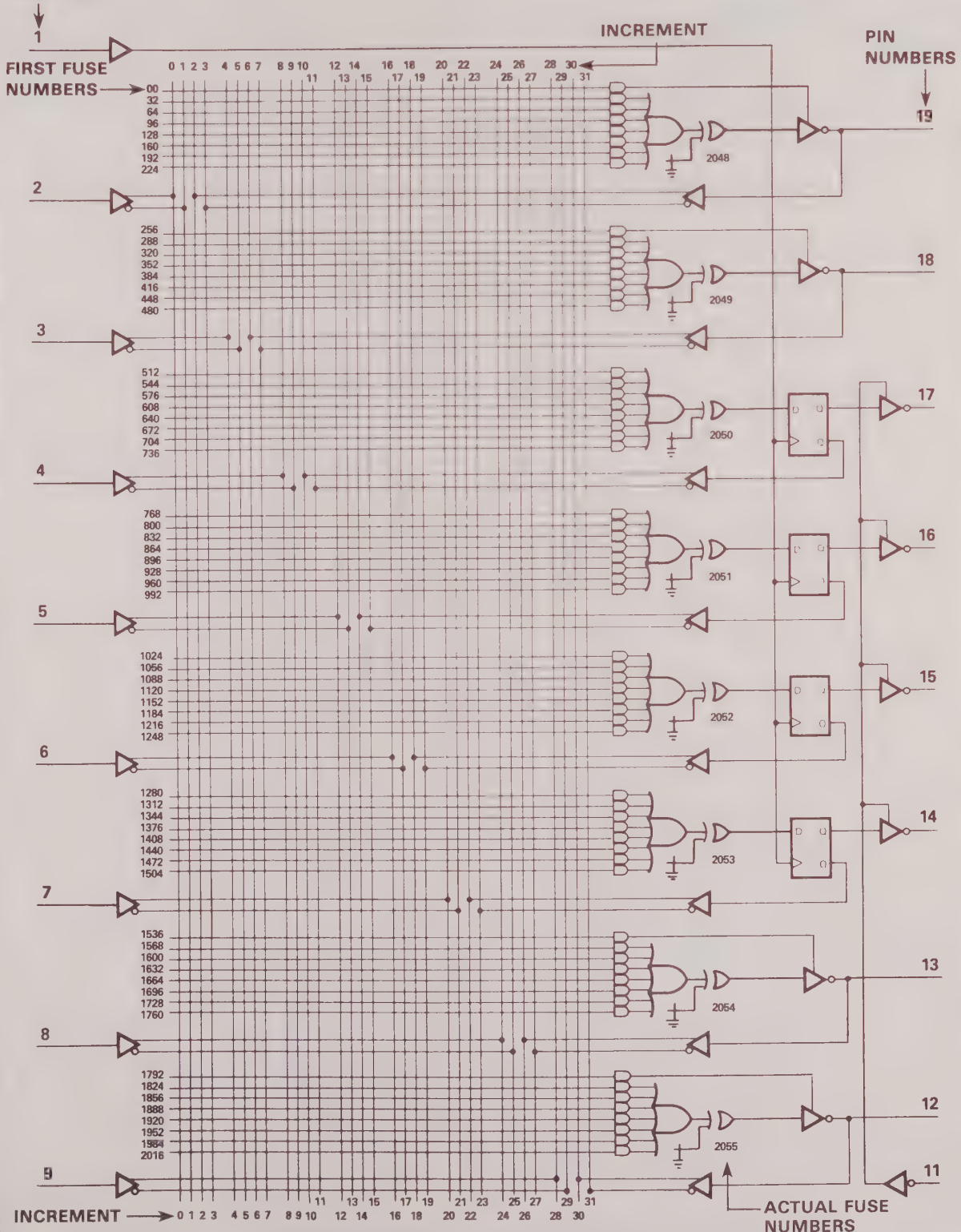
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL16RA8



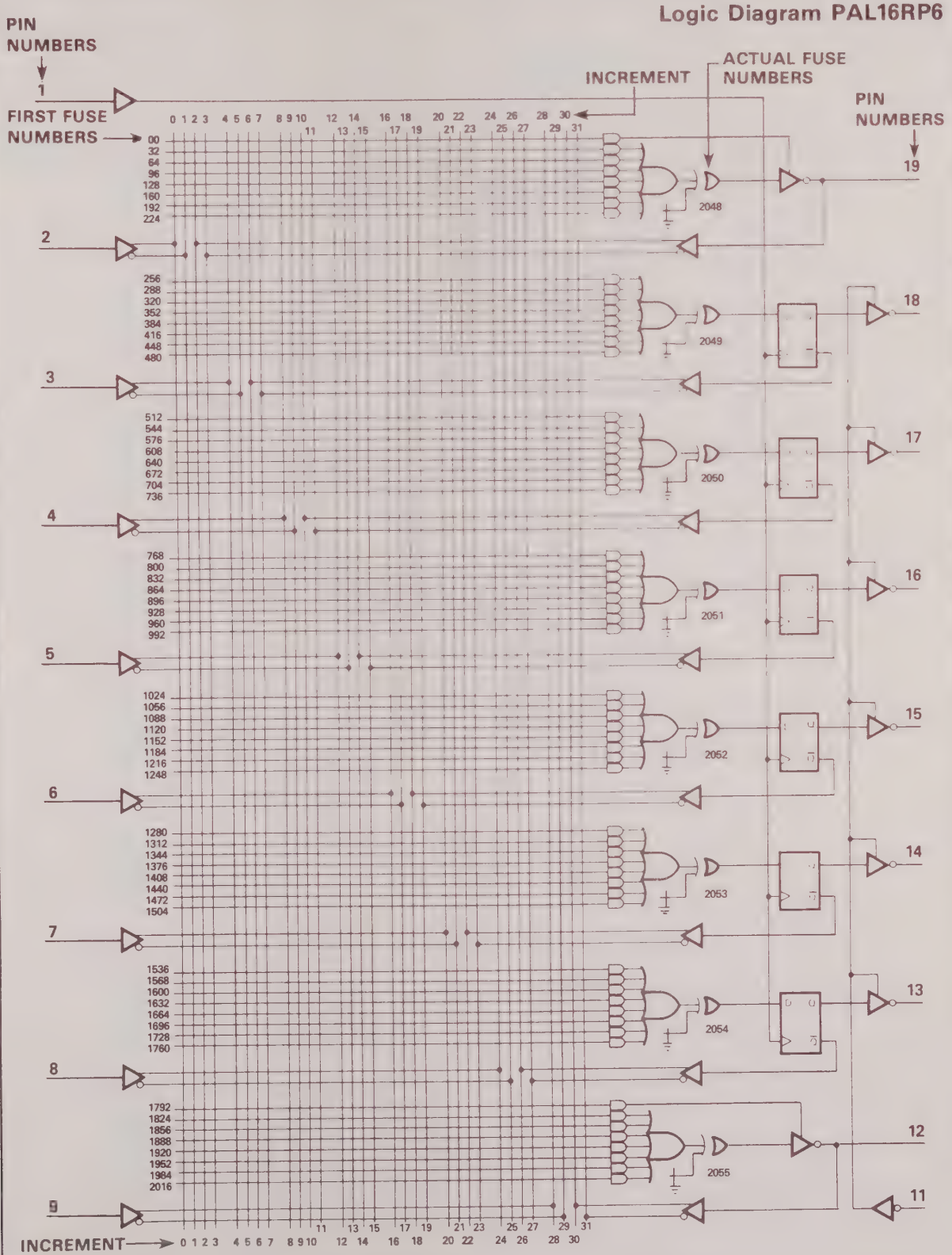
NOTE. FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL16RP4



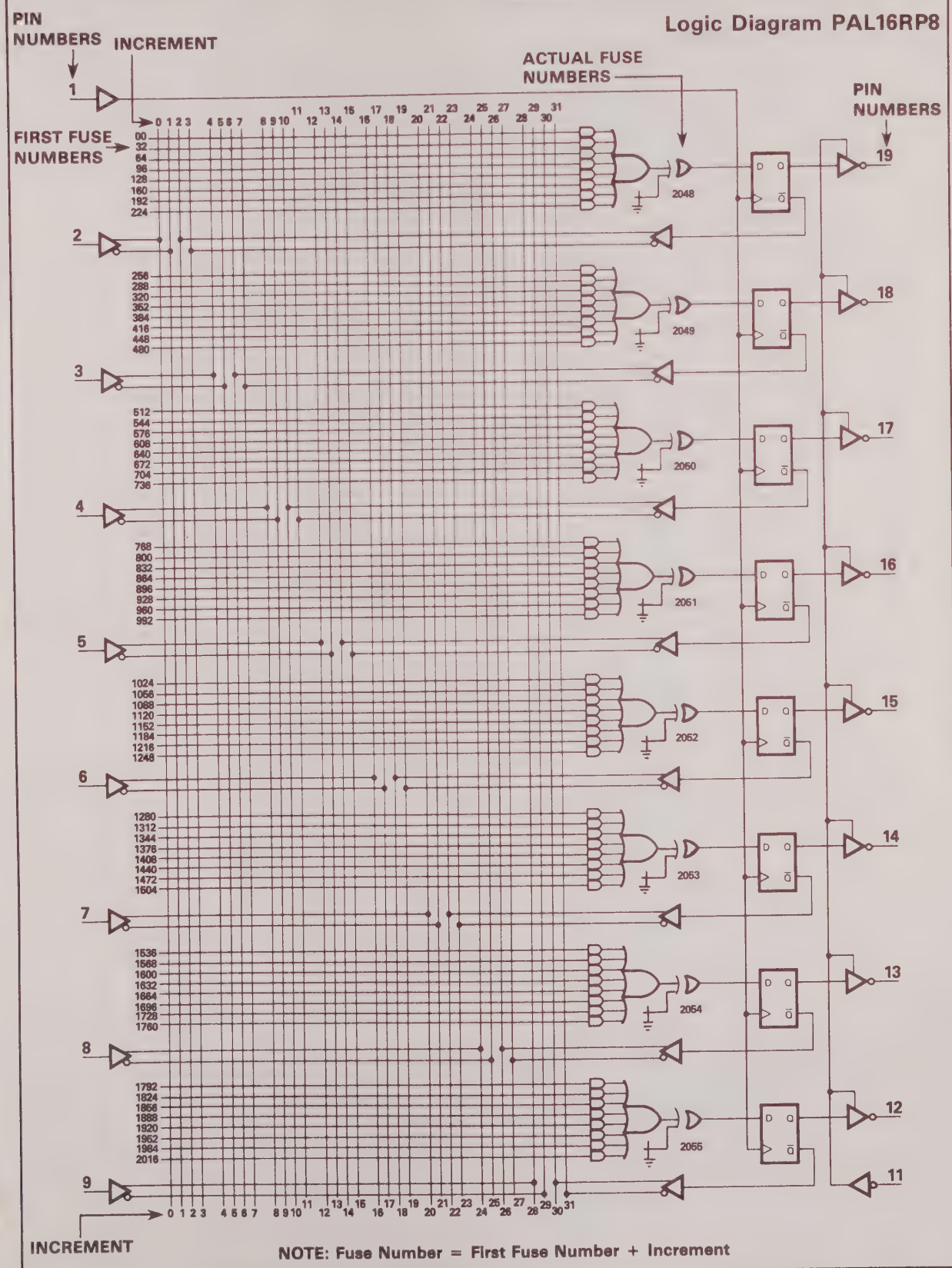
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL16RP6



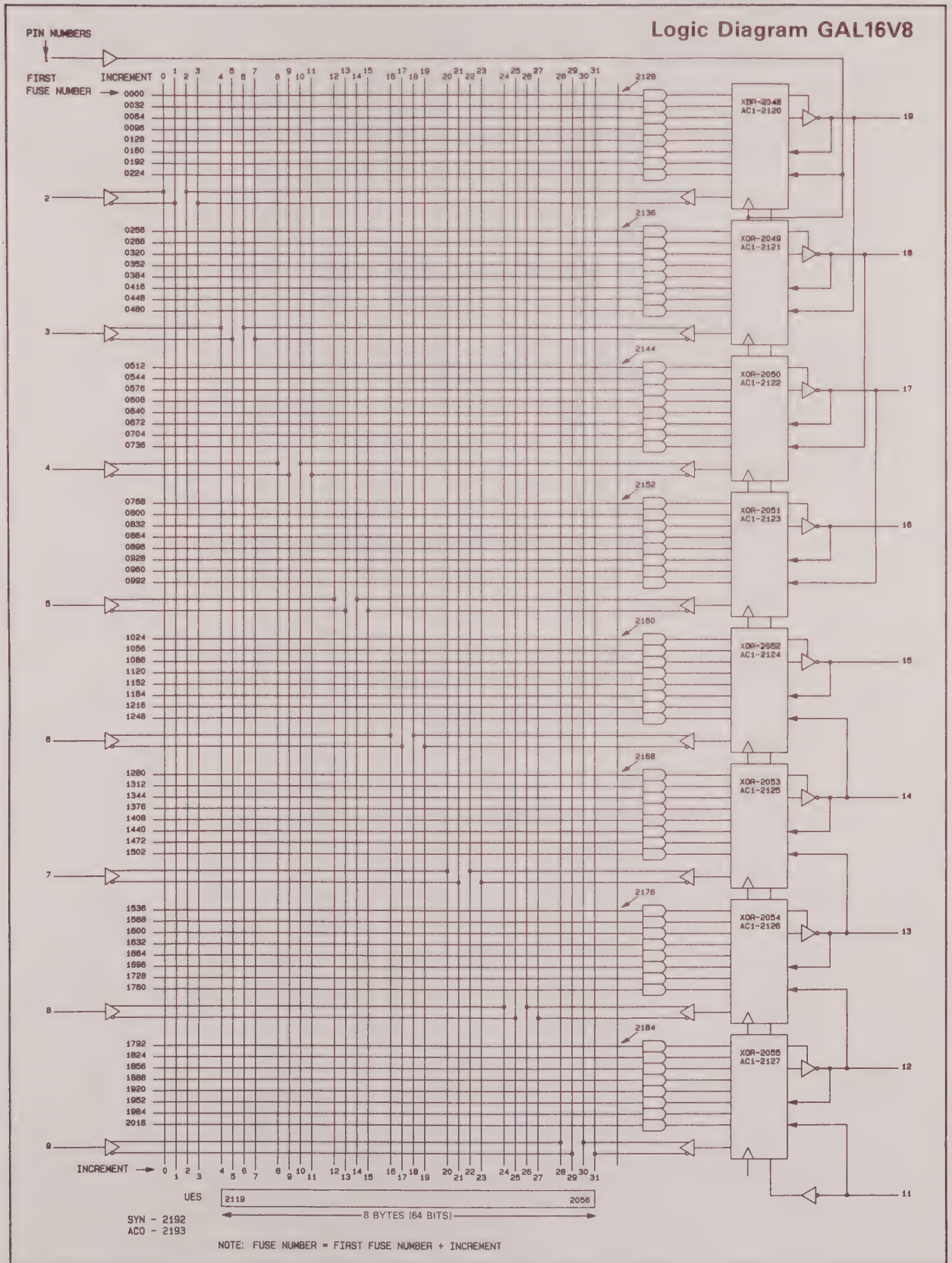
NOTE: Fuse Number = First Fuse Number + Increment

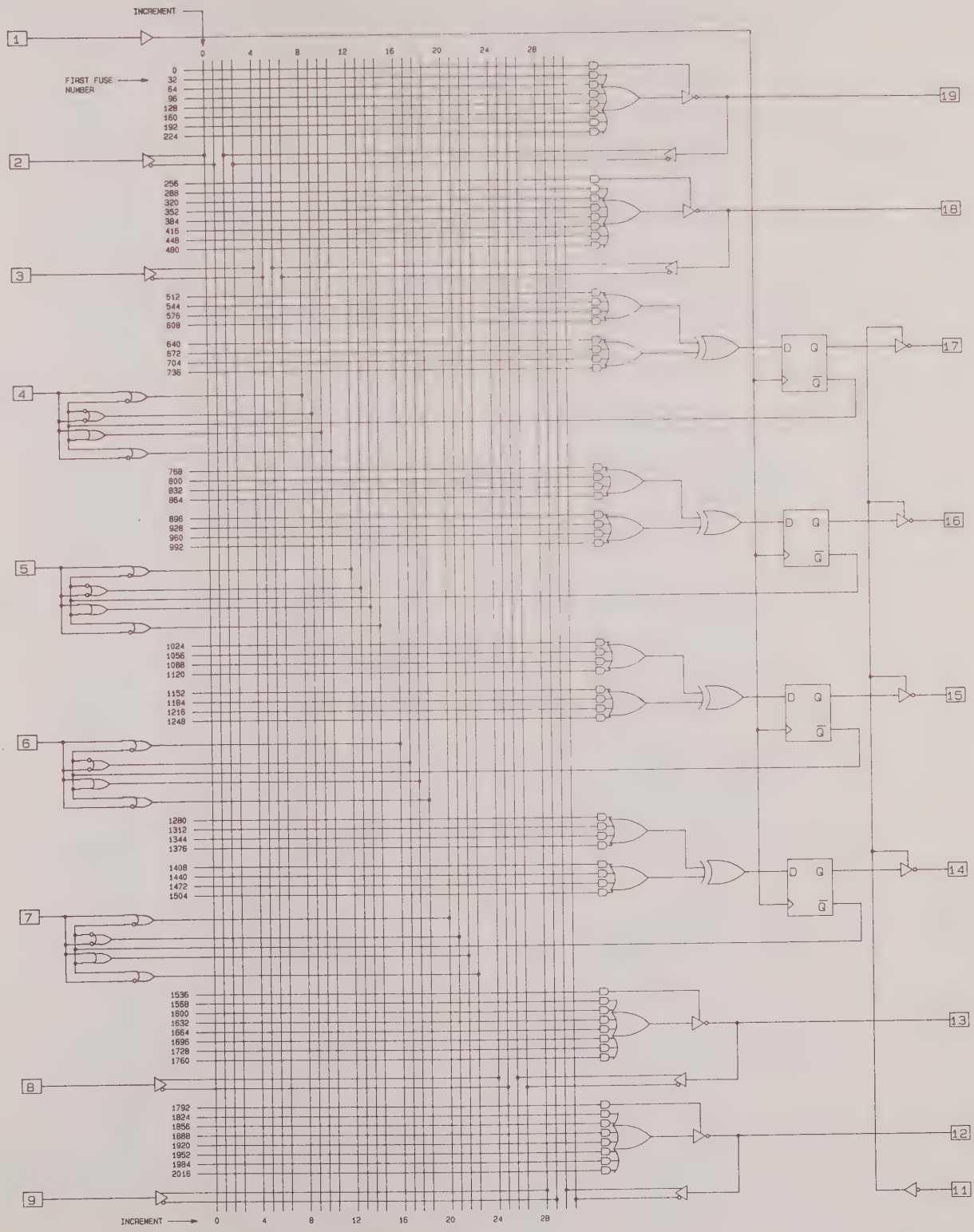
Logic Diagram PAL16RP8



NOTE: Fuse Number = First Fuse Number + Increment

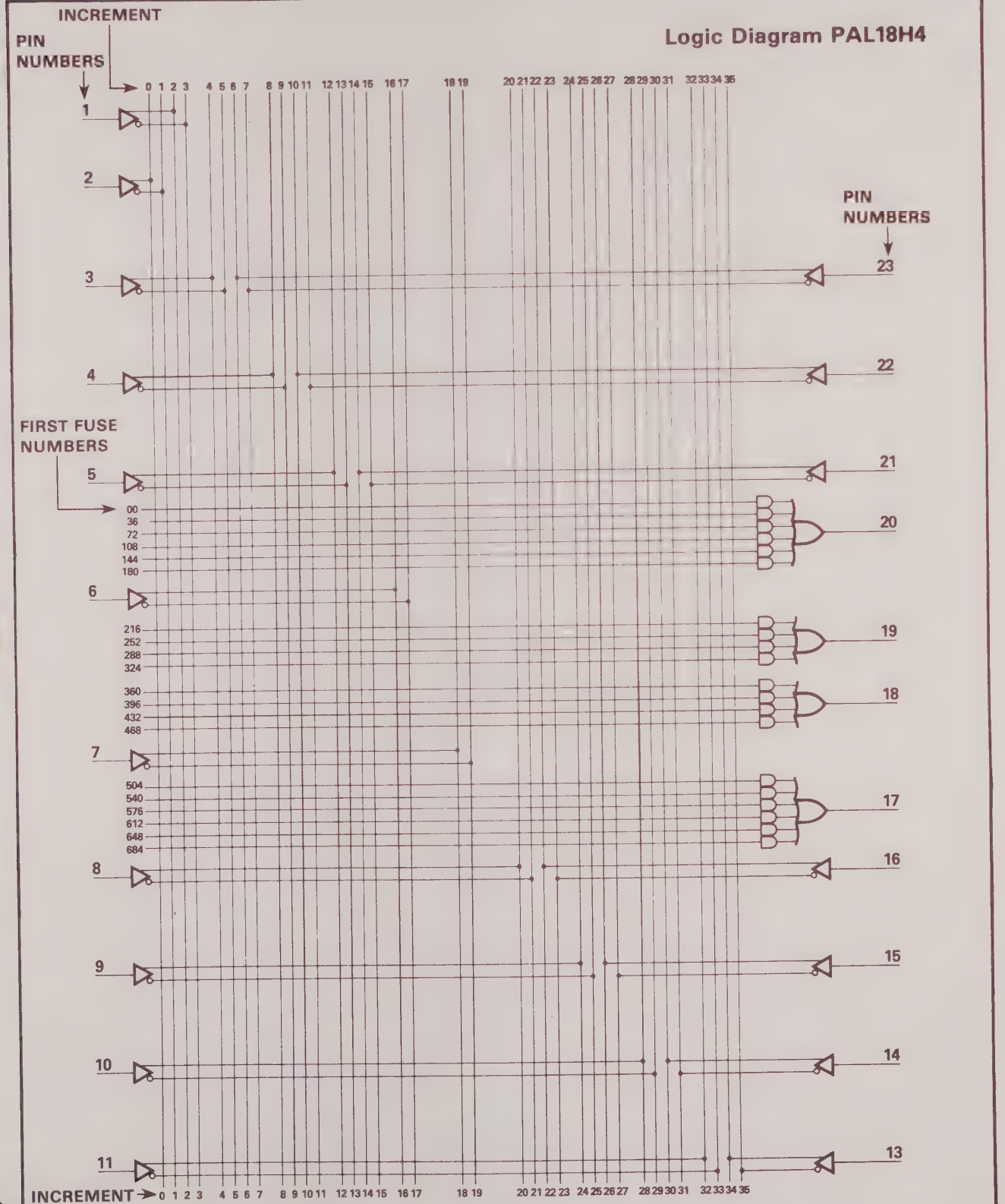
Logic Diagram GAL16V8





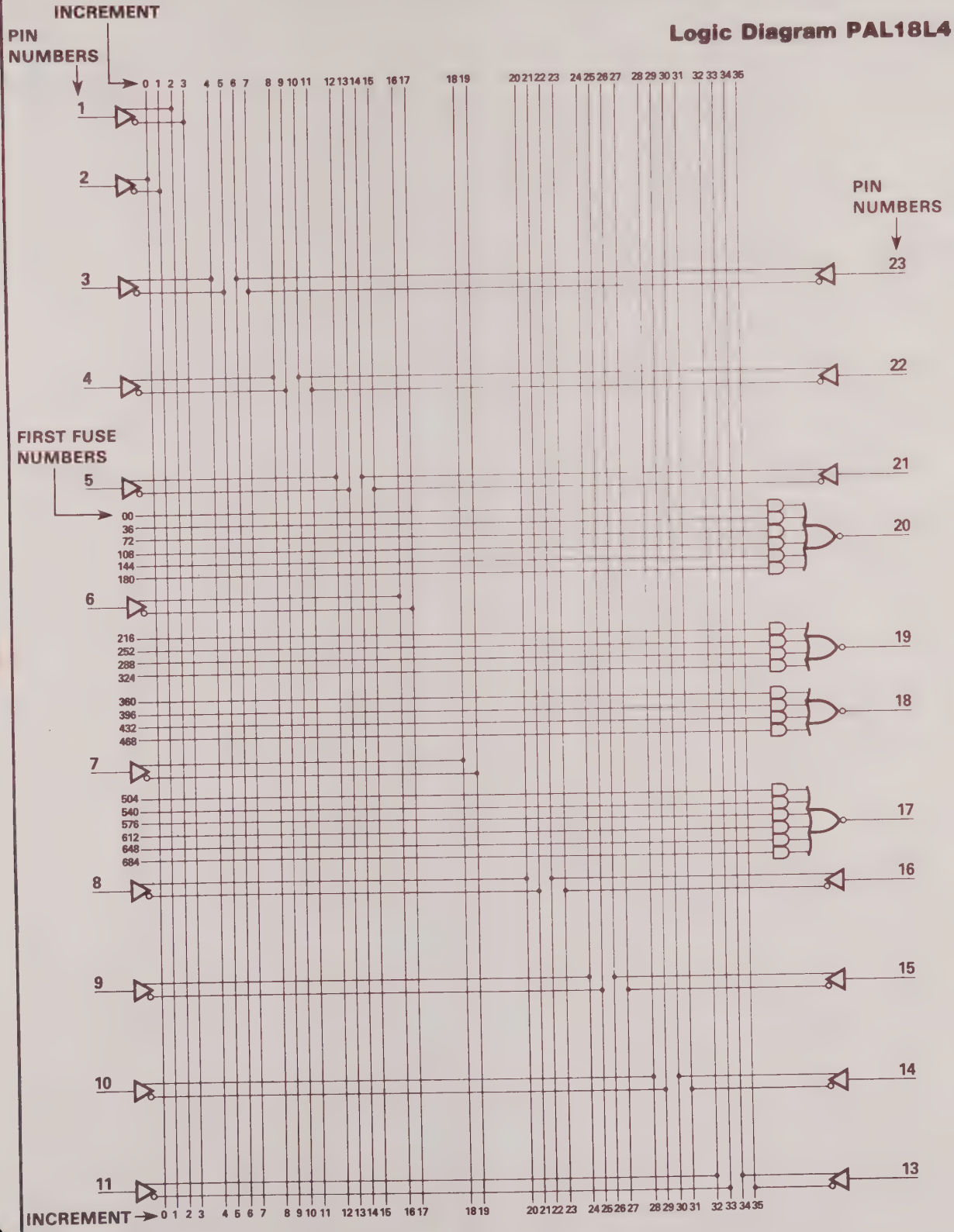
NOTE: FUSE NUMBERS = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL18H4



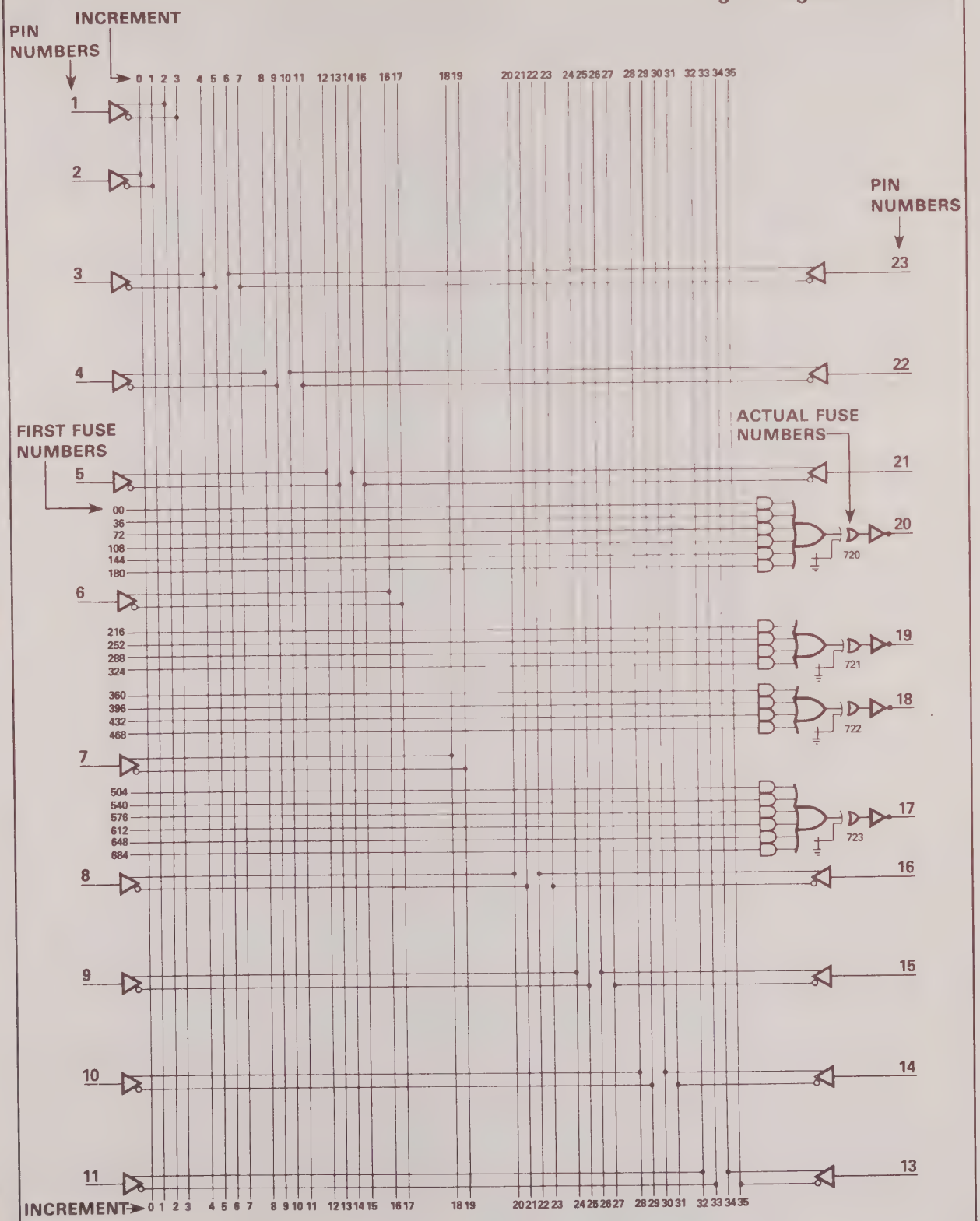
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL18L4



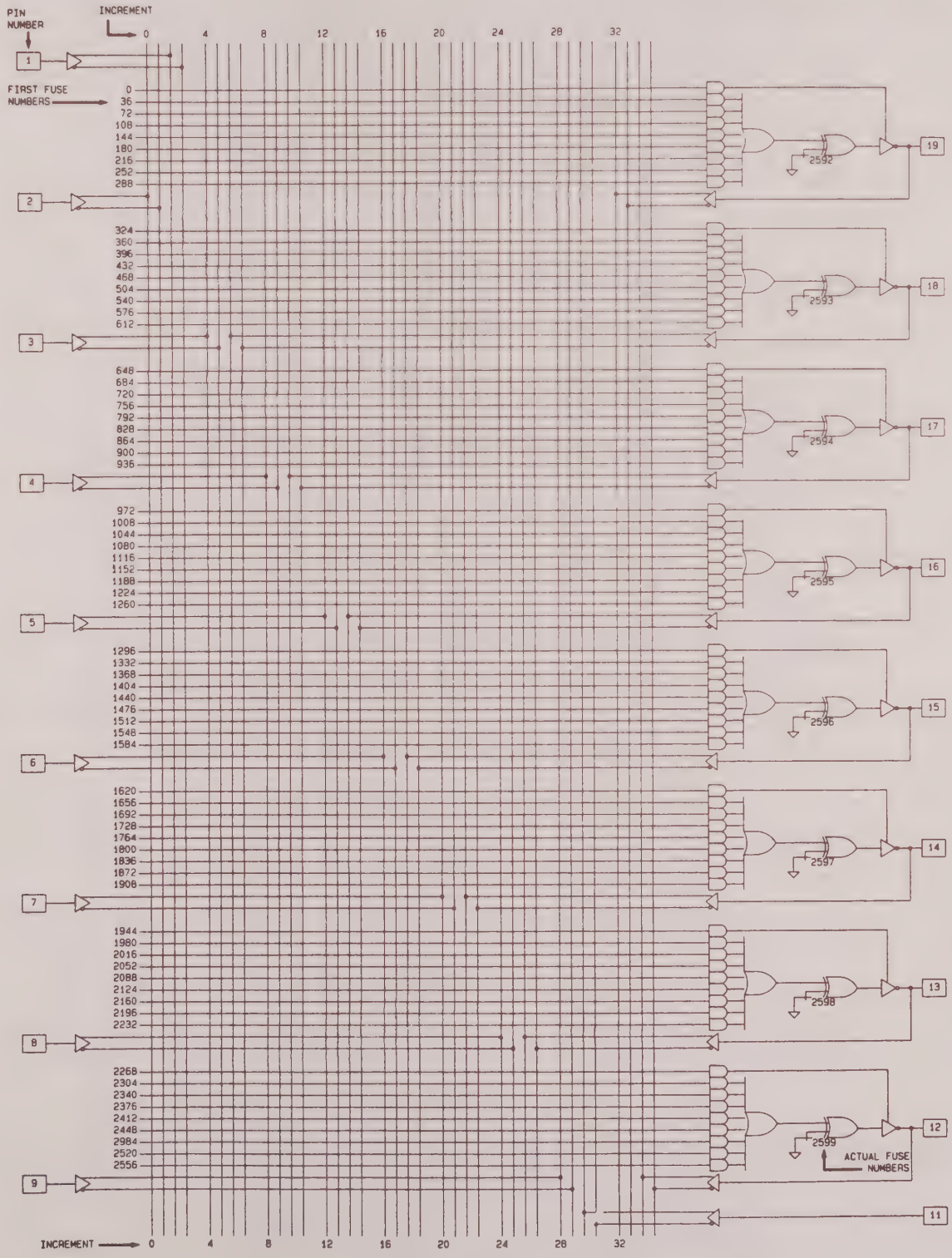
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL18P4



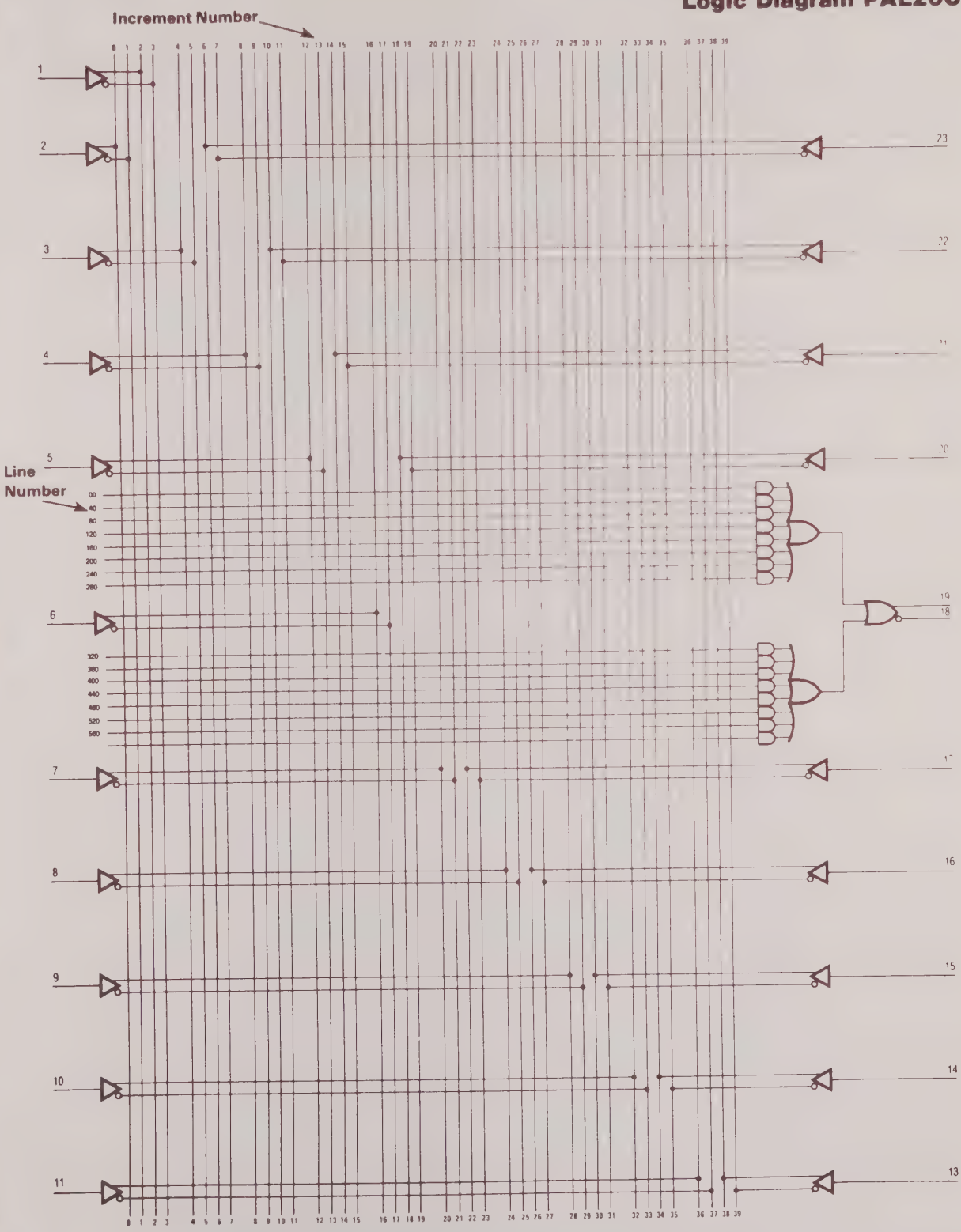
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL18P8

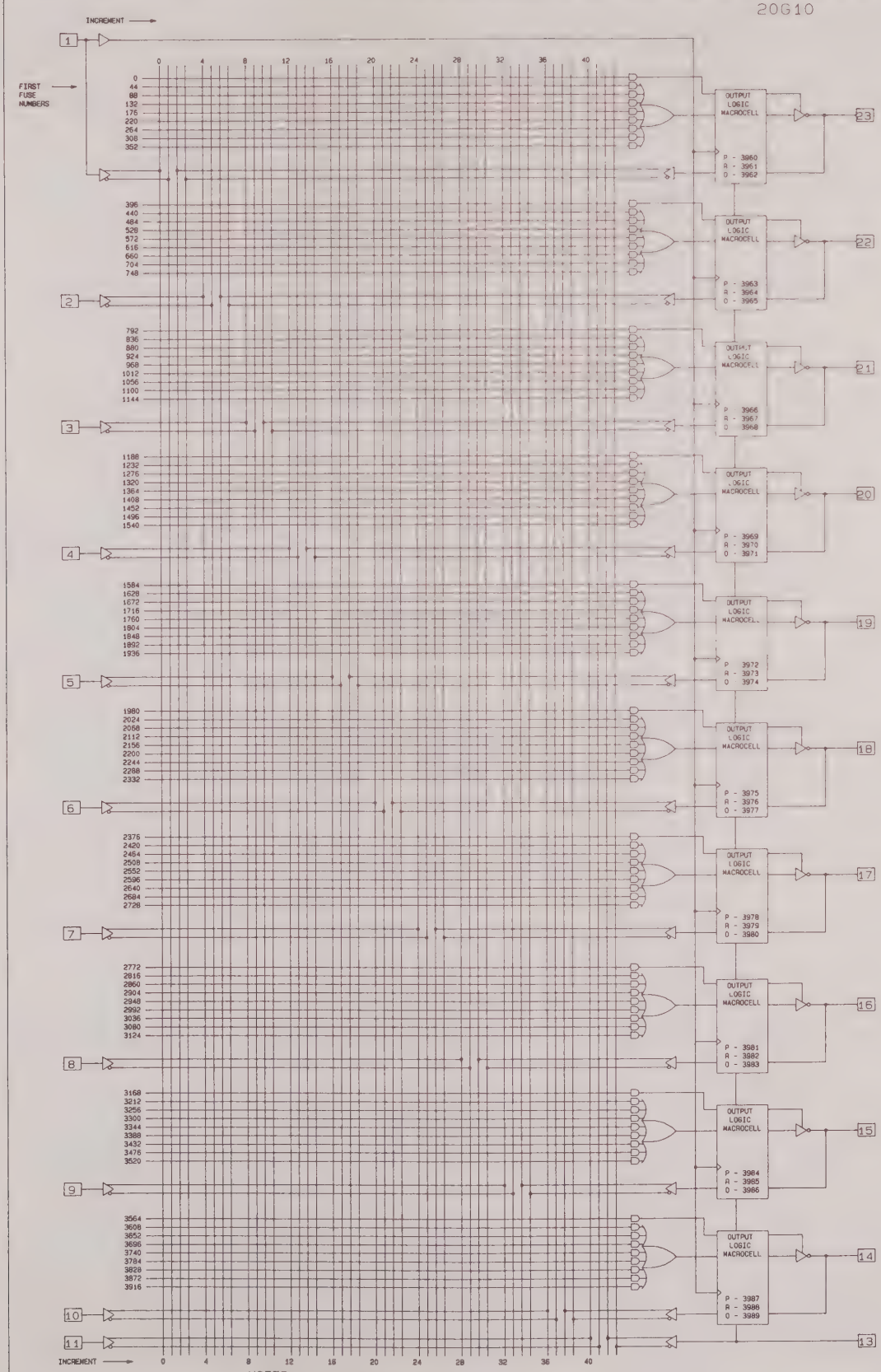


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL20C1



NOTE: Fuse number = Increment Number + Line Number

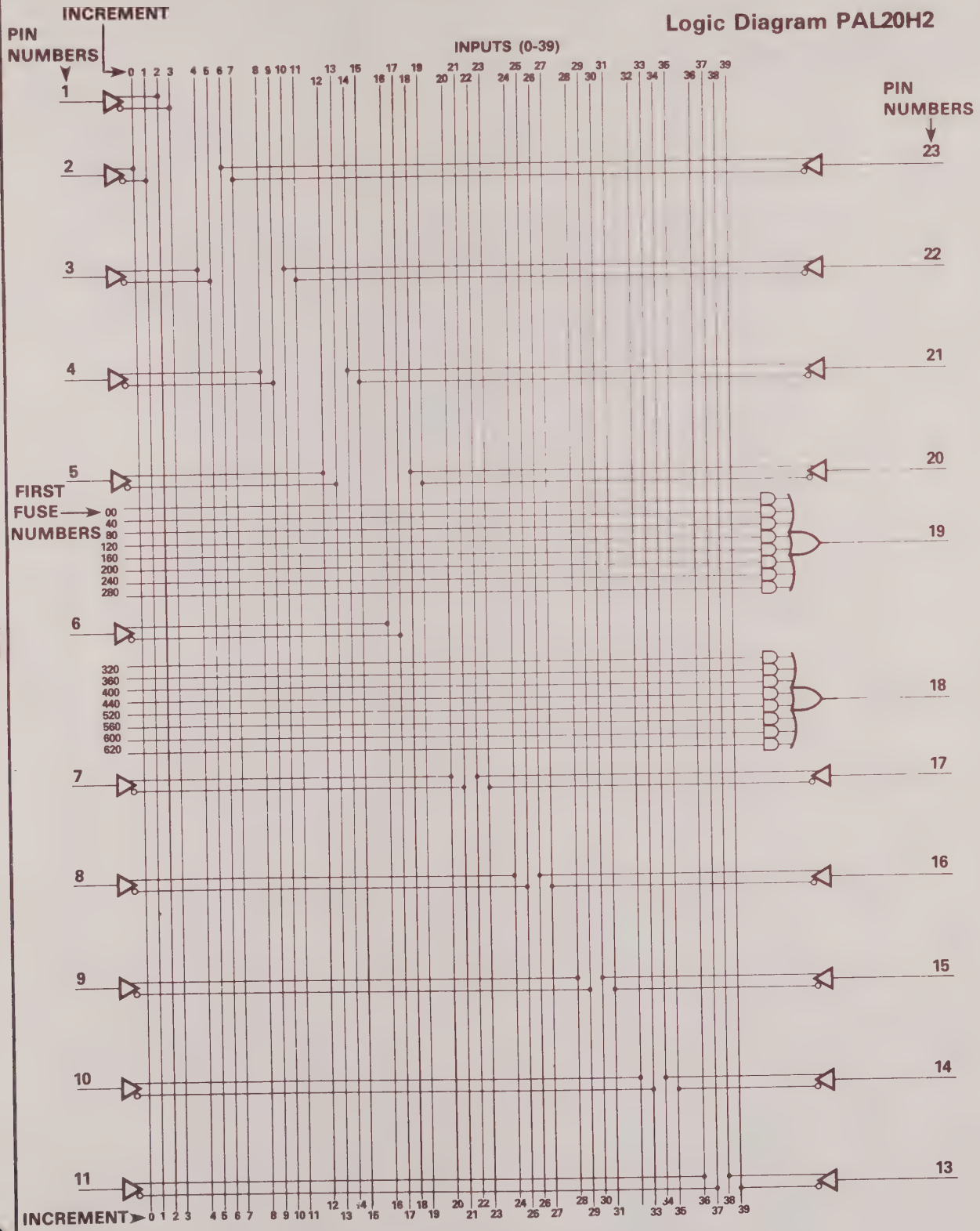


NOTES:

1 INSIDE EACH MACROCELL, THE "P" FUSE NUMBER IS THE POLARITY FUSE, THE "R" FUSE NUMBER IS THE REGISTER FUSE, AND THE "O" FUSE NUMBER IS THE OUTPUT ENABLE FUSE

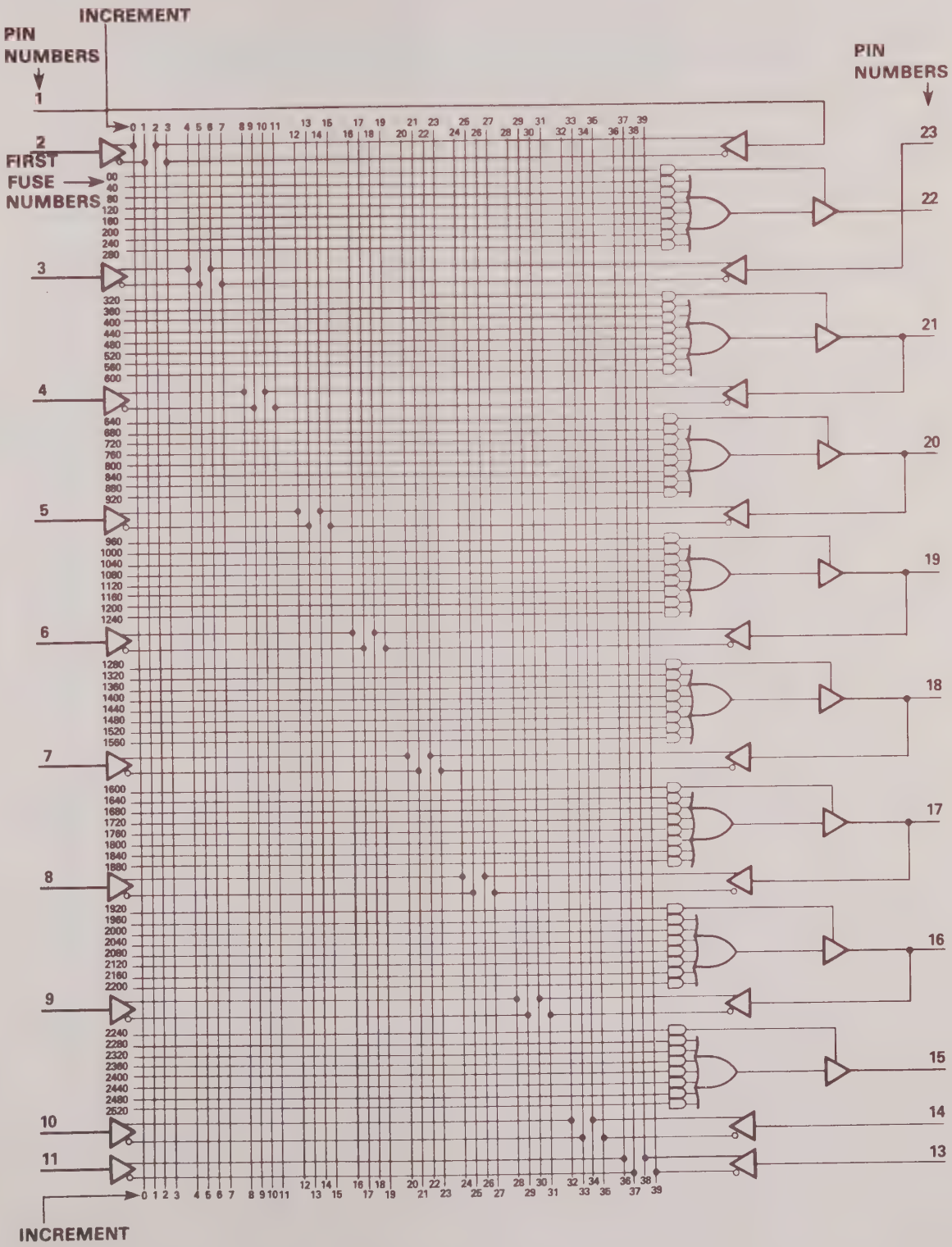
2. FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL20H2



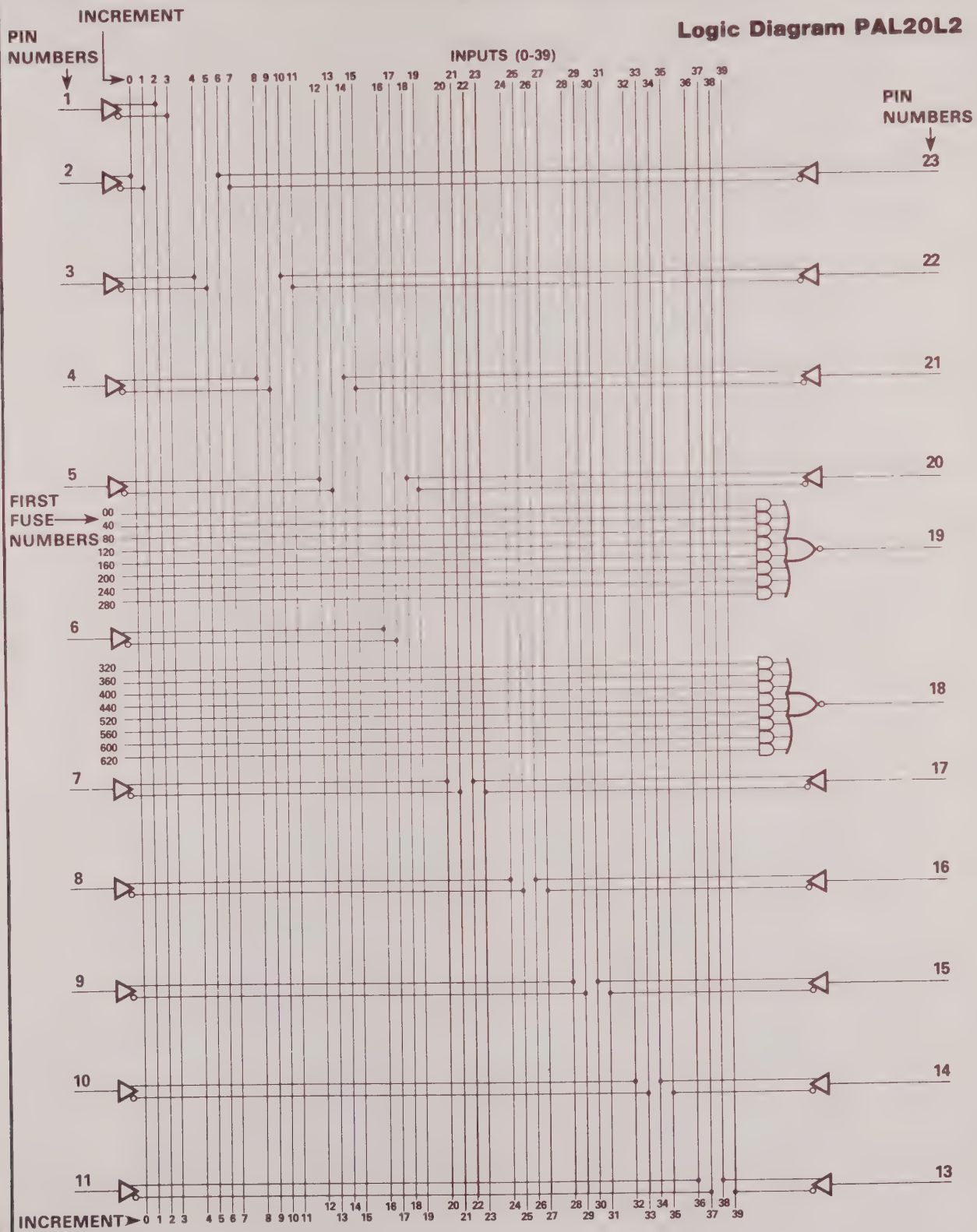
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram RAL/PAL20H8

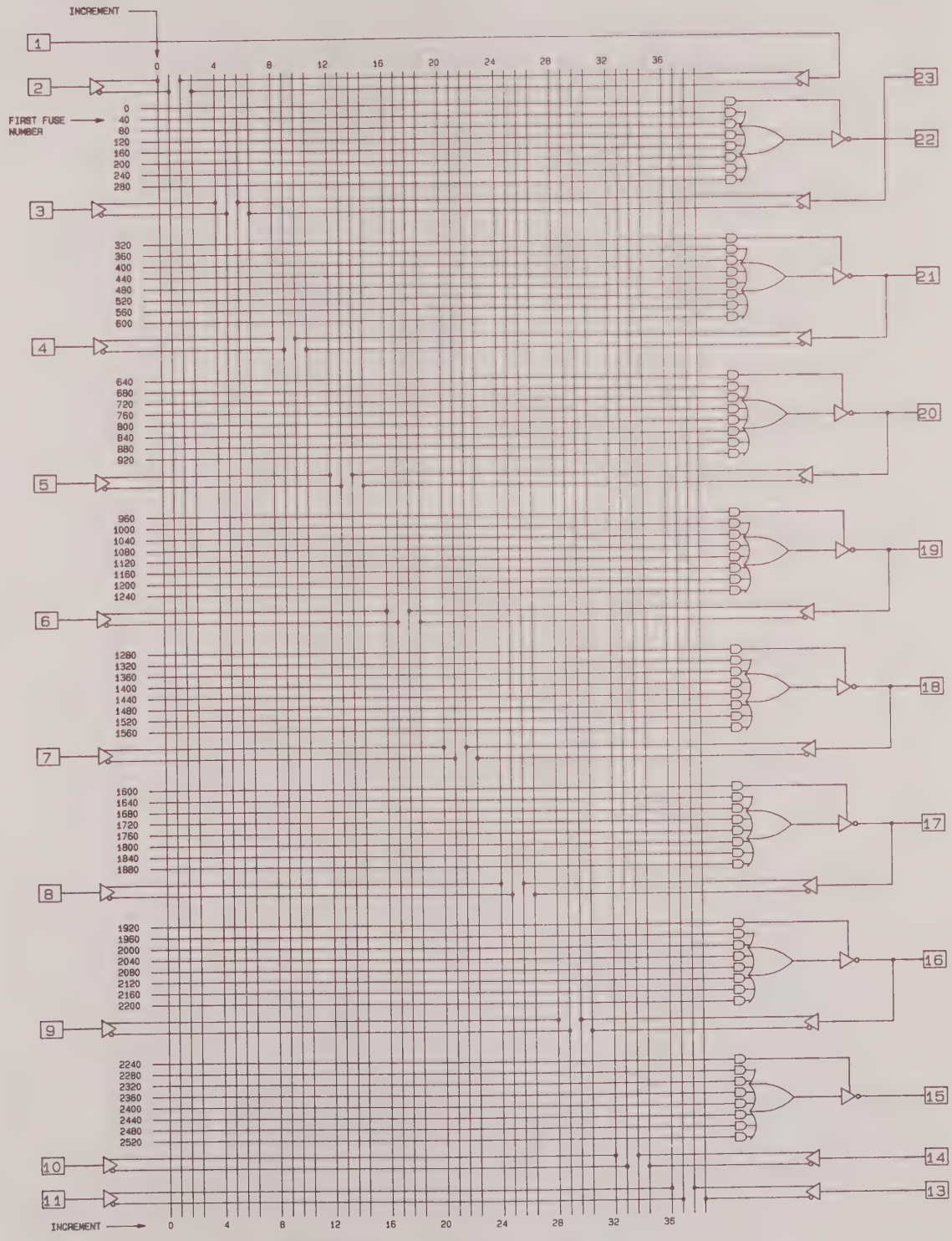


NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL20L2

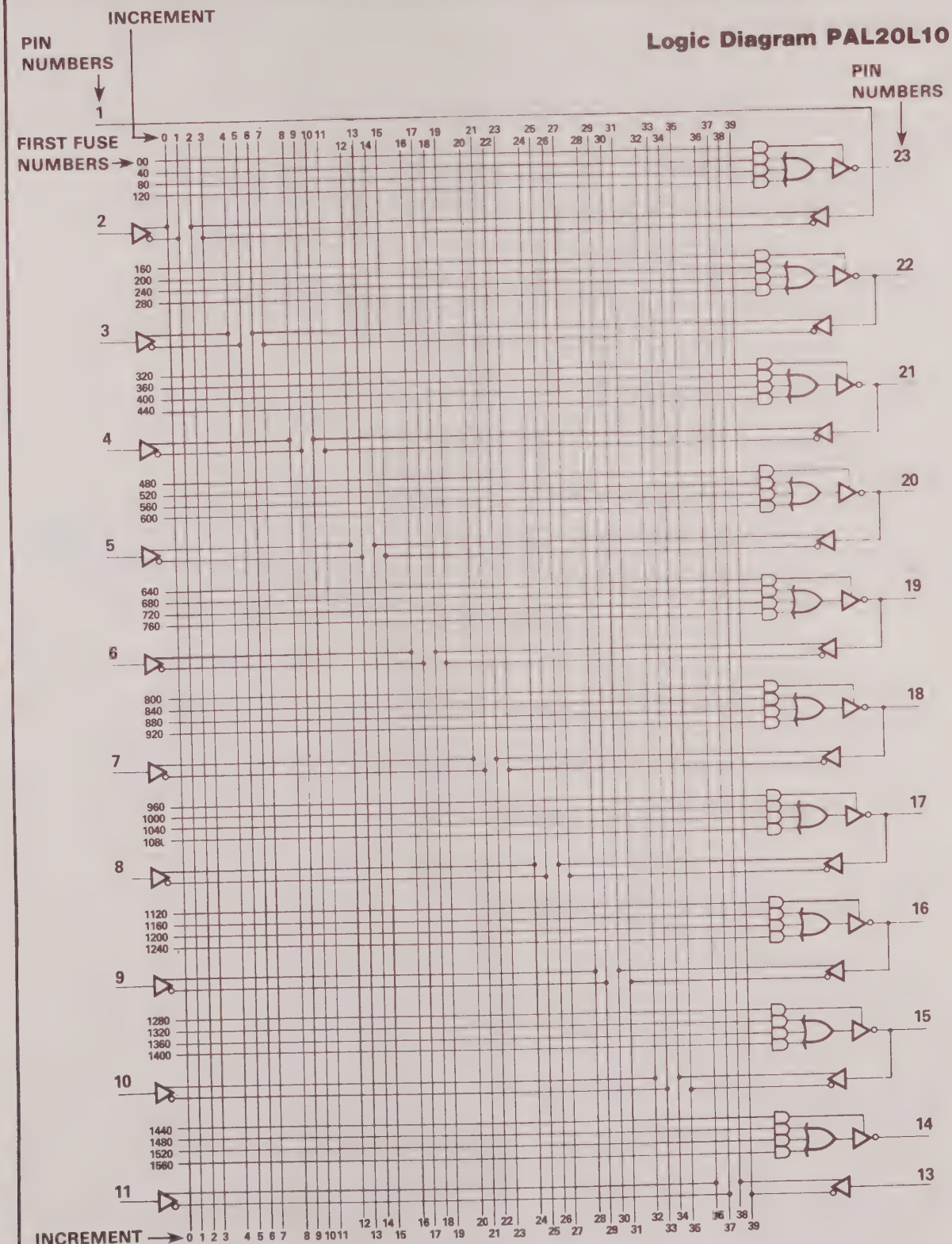


NOTE: Fuse Number = First Fuse Number + Increment



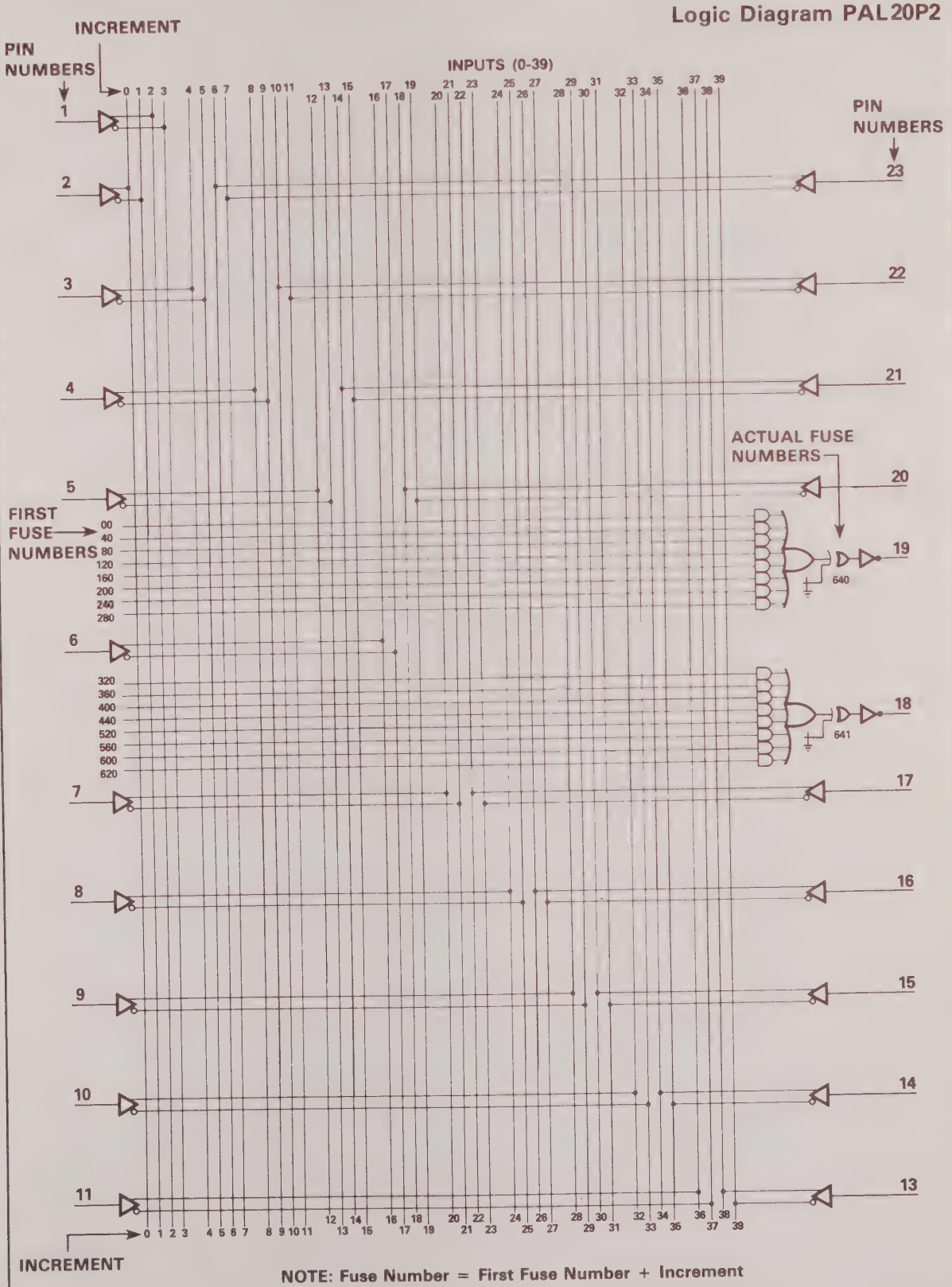
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL20L10

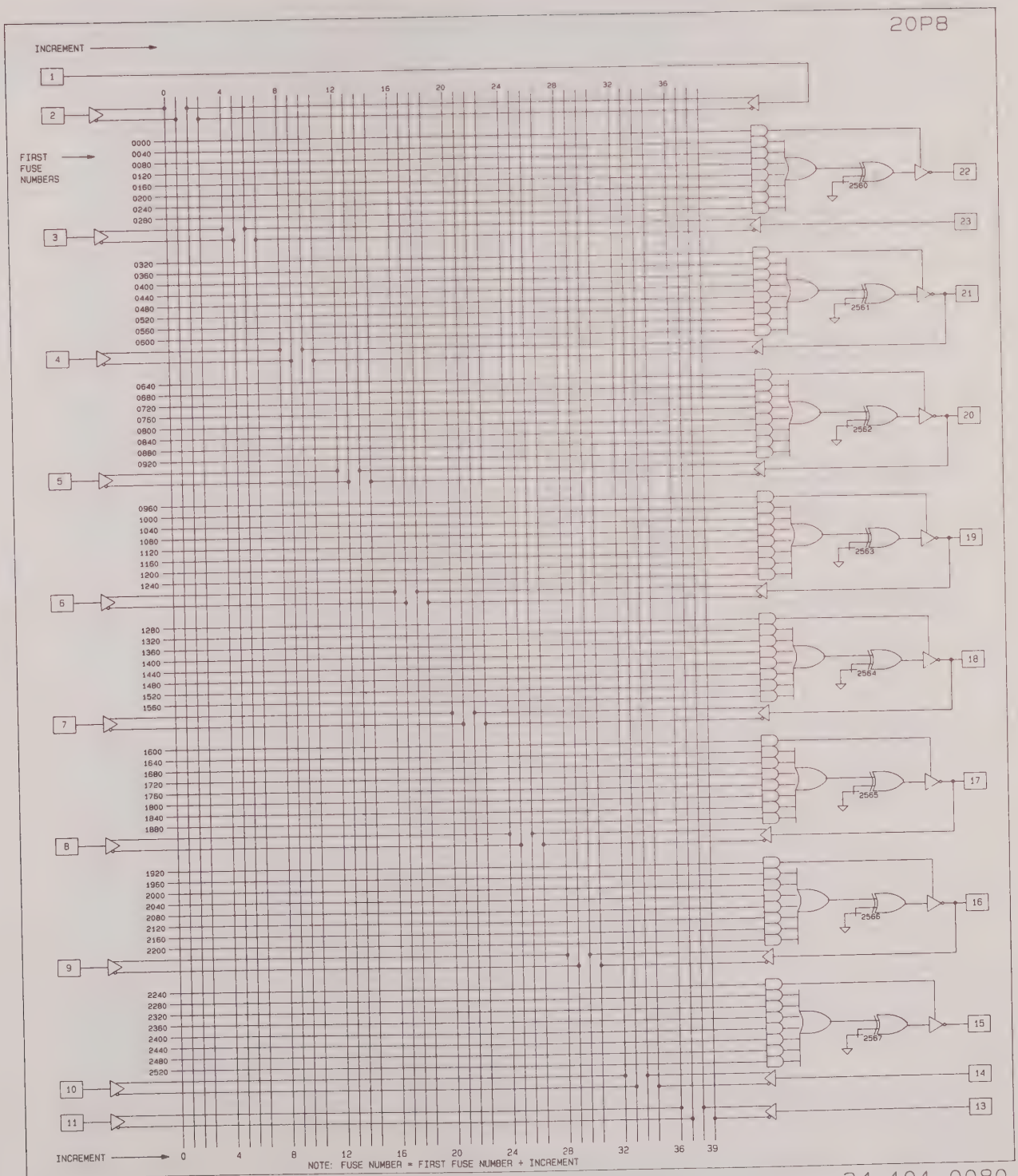


NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL20P2



NOTE: Fuse Number = First Fuse Number + Increment


20P8
INCREMENT
FIRST FUSE NUMBERS
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0080
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0280
0320
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0400
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0480
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0880
0920
0960
1000
1040
1080
1120
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1200
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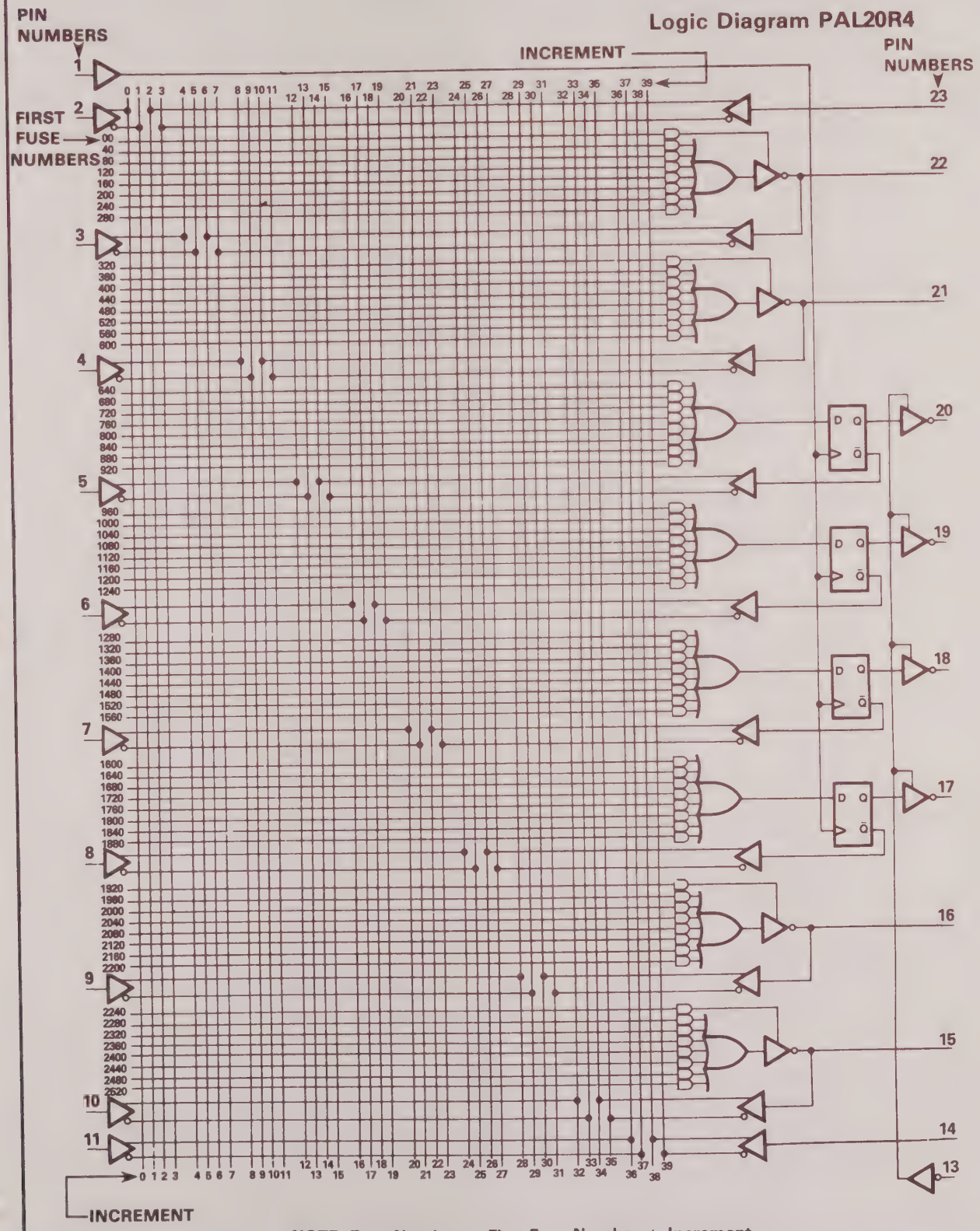
2567
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

34-101-0080

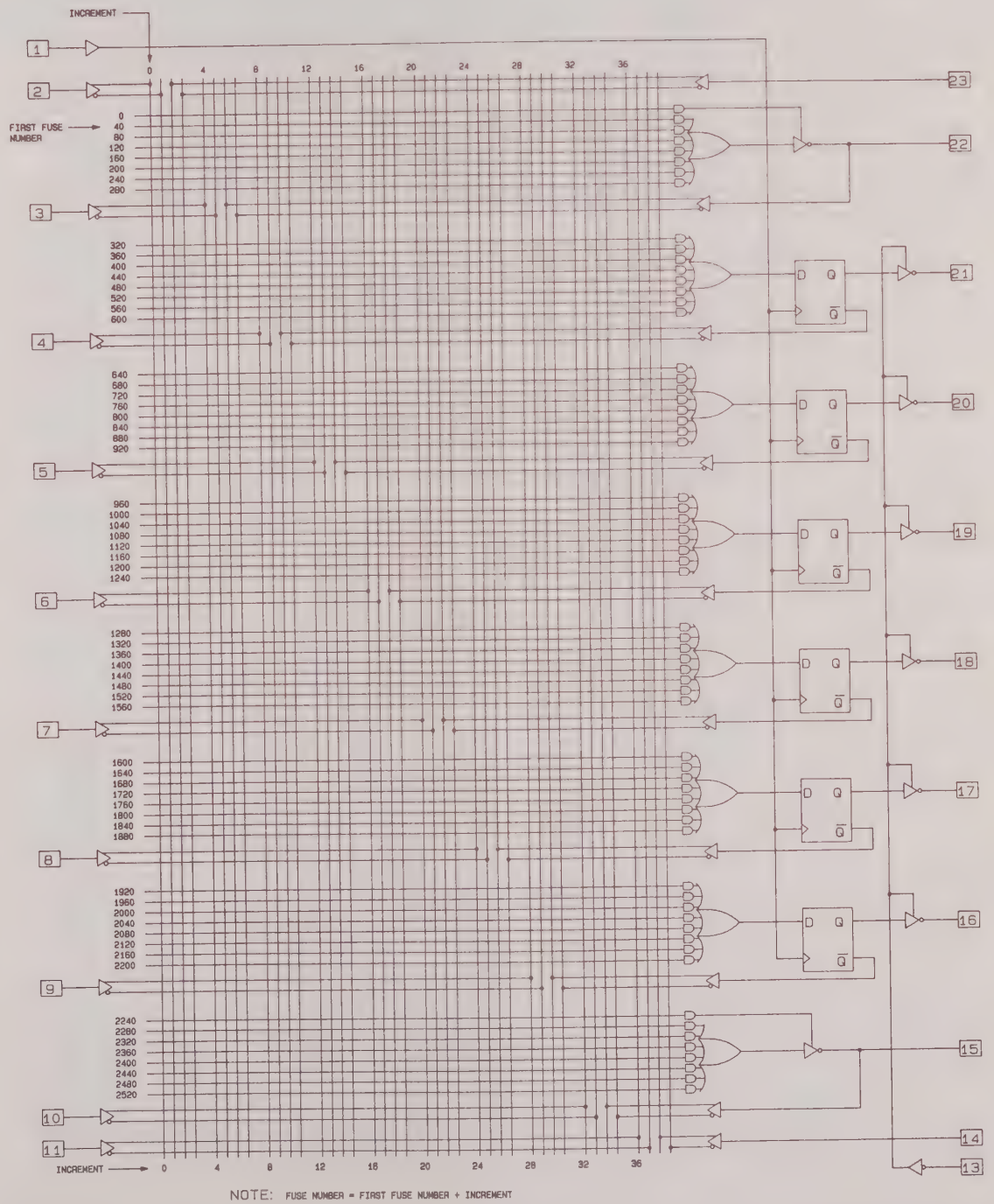
Logic Diagram PAL20R4



NOTE: Fuse Number = First Fuse Number + Increment

34-101-0036

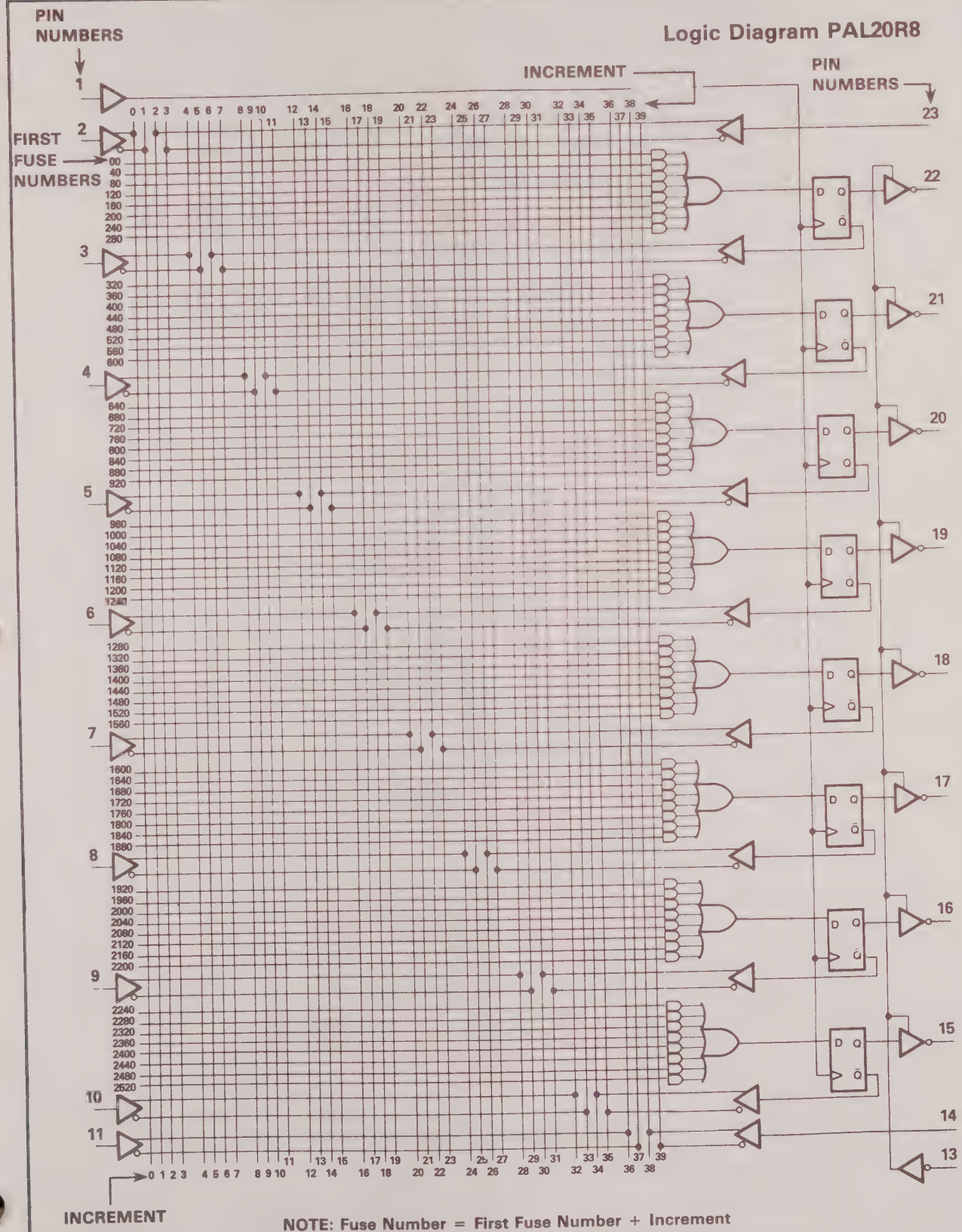
20R6

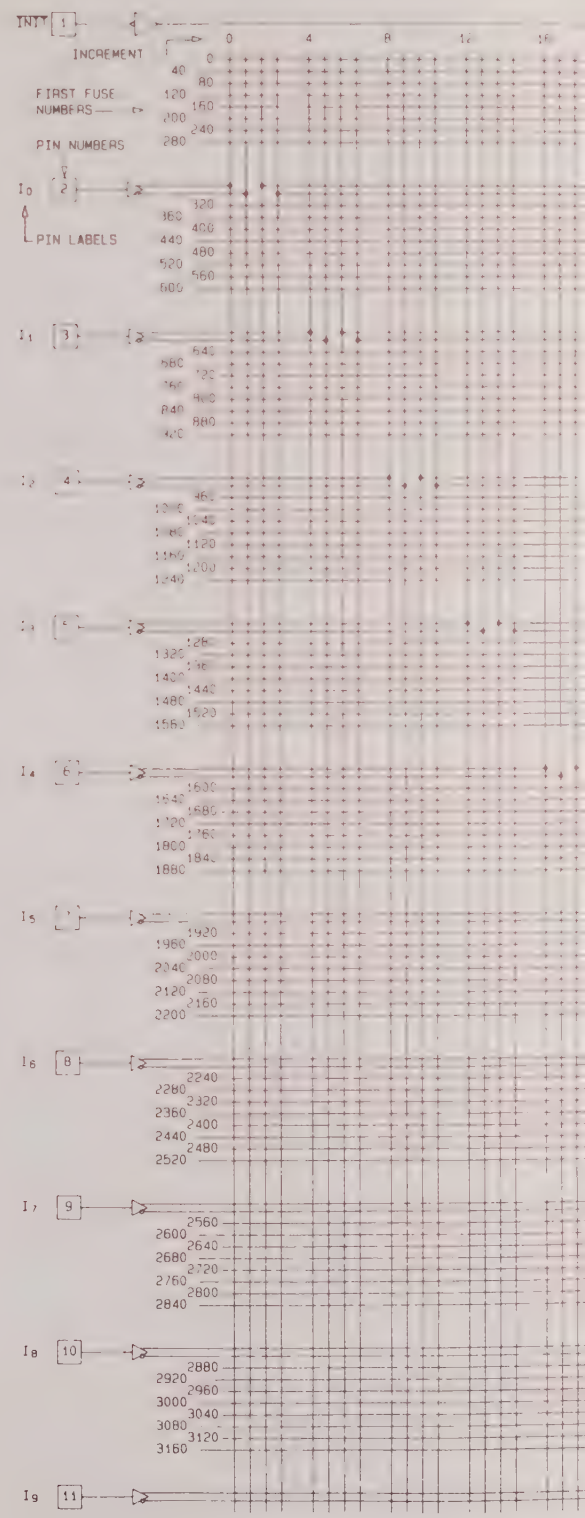


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

34-101-0037

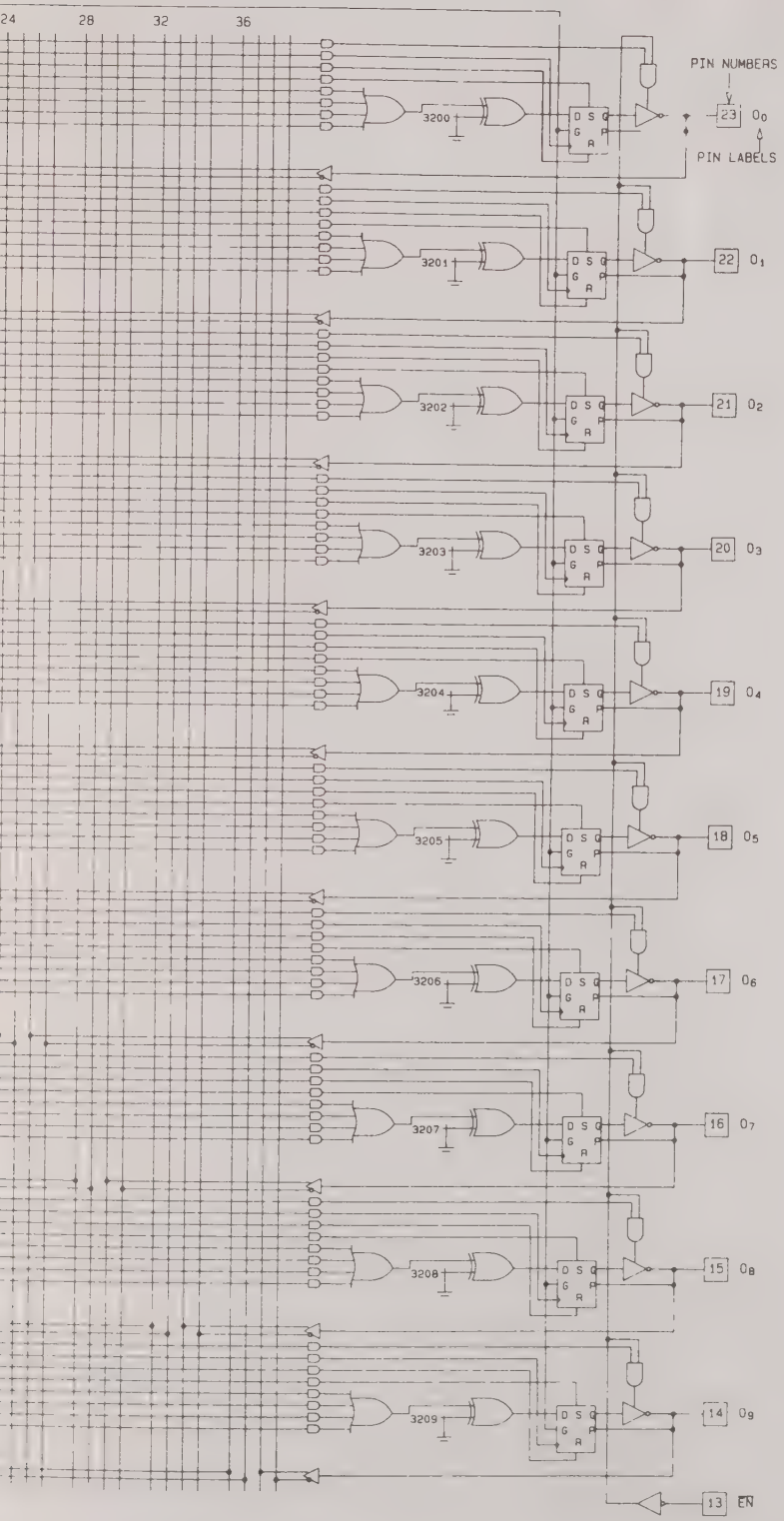
Logic Diagram PAL20R8

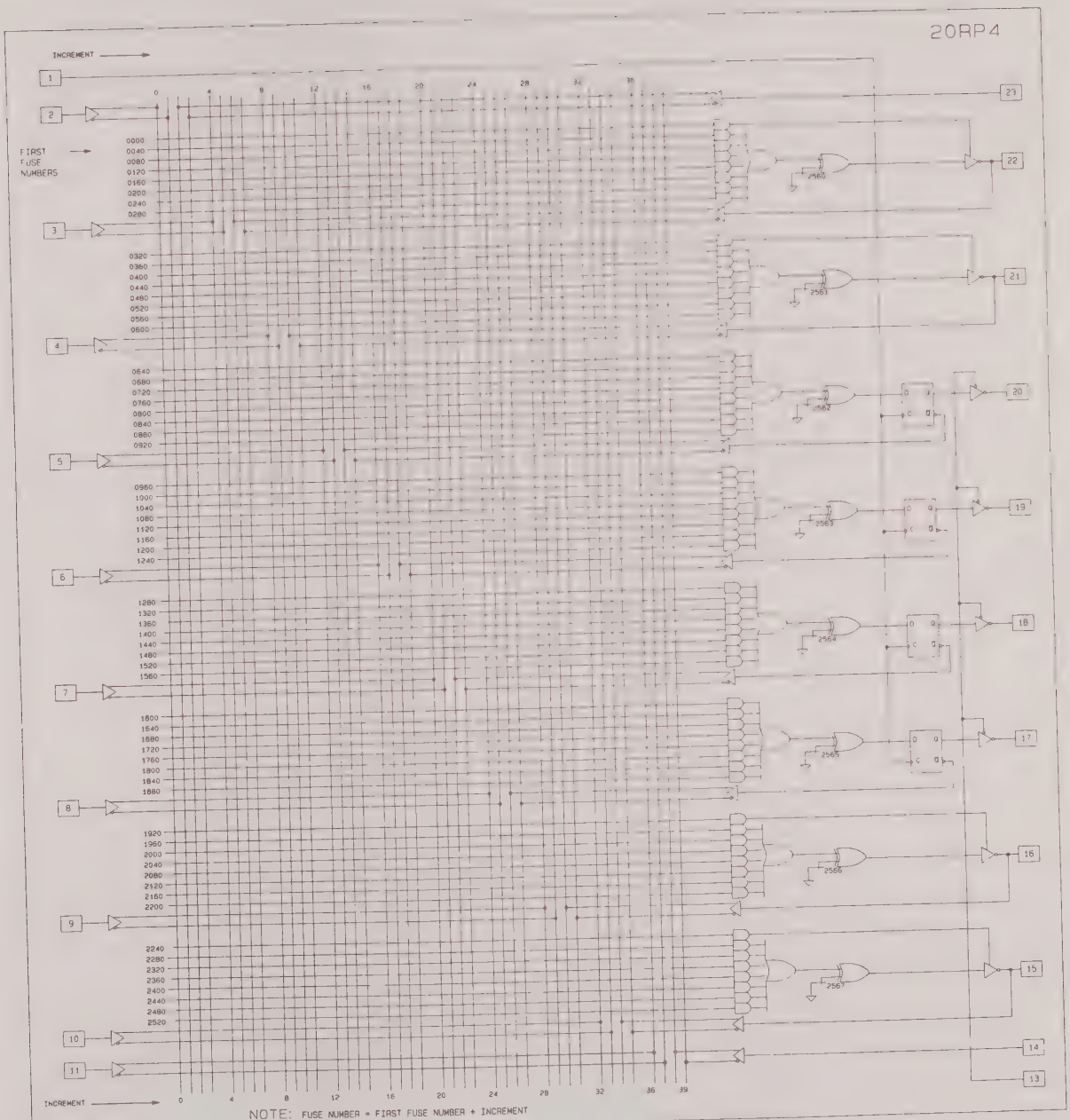




NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCRE

Logic Diagram PAL20RA10




20RP4
INCREMENT
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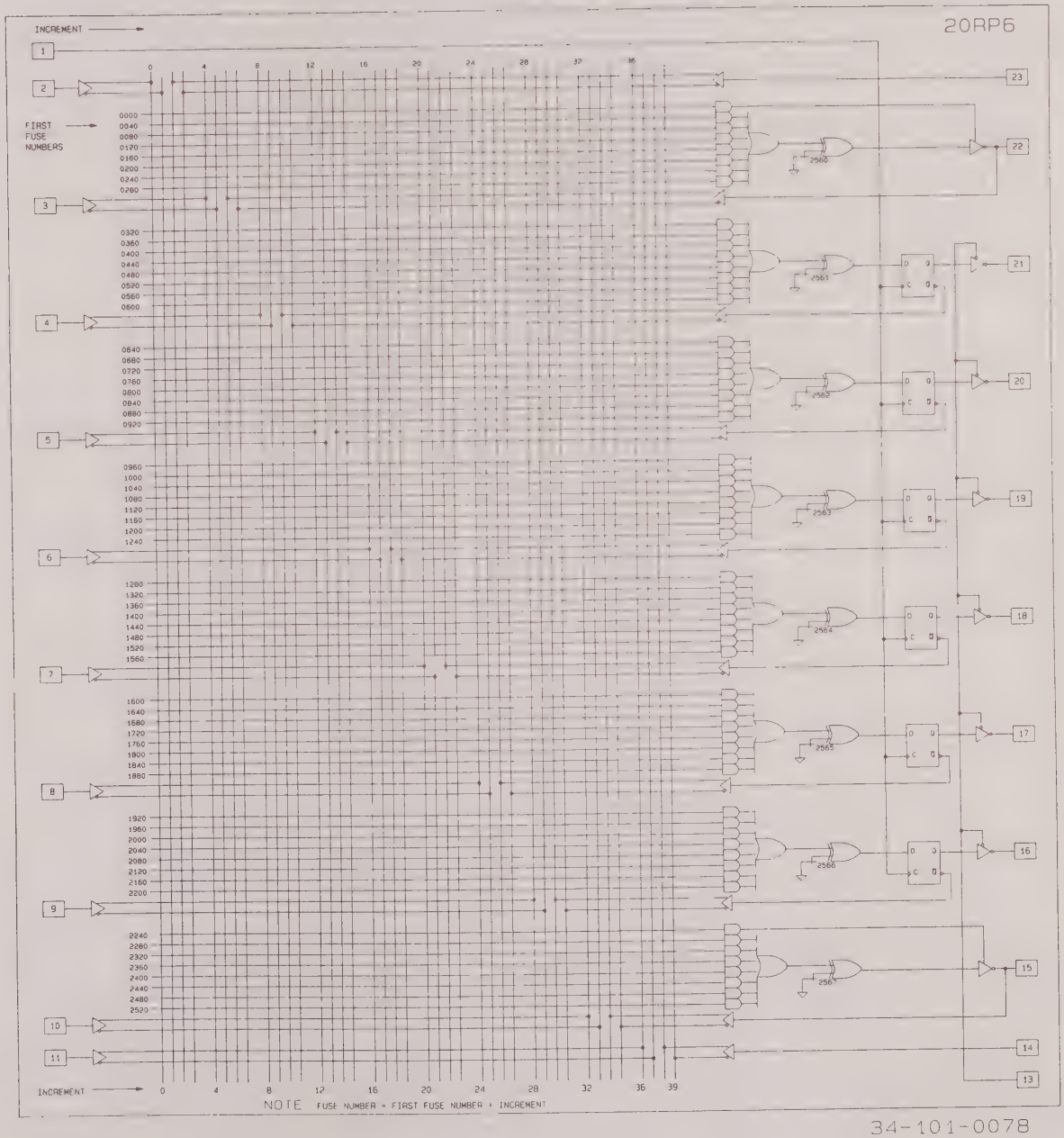
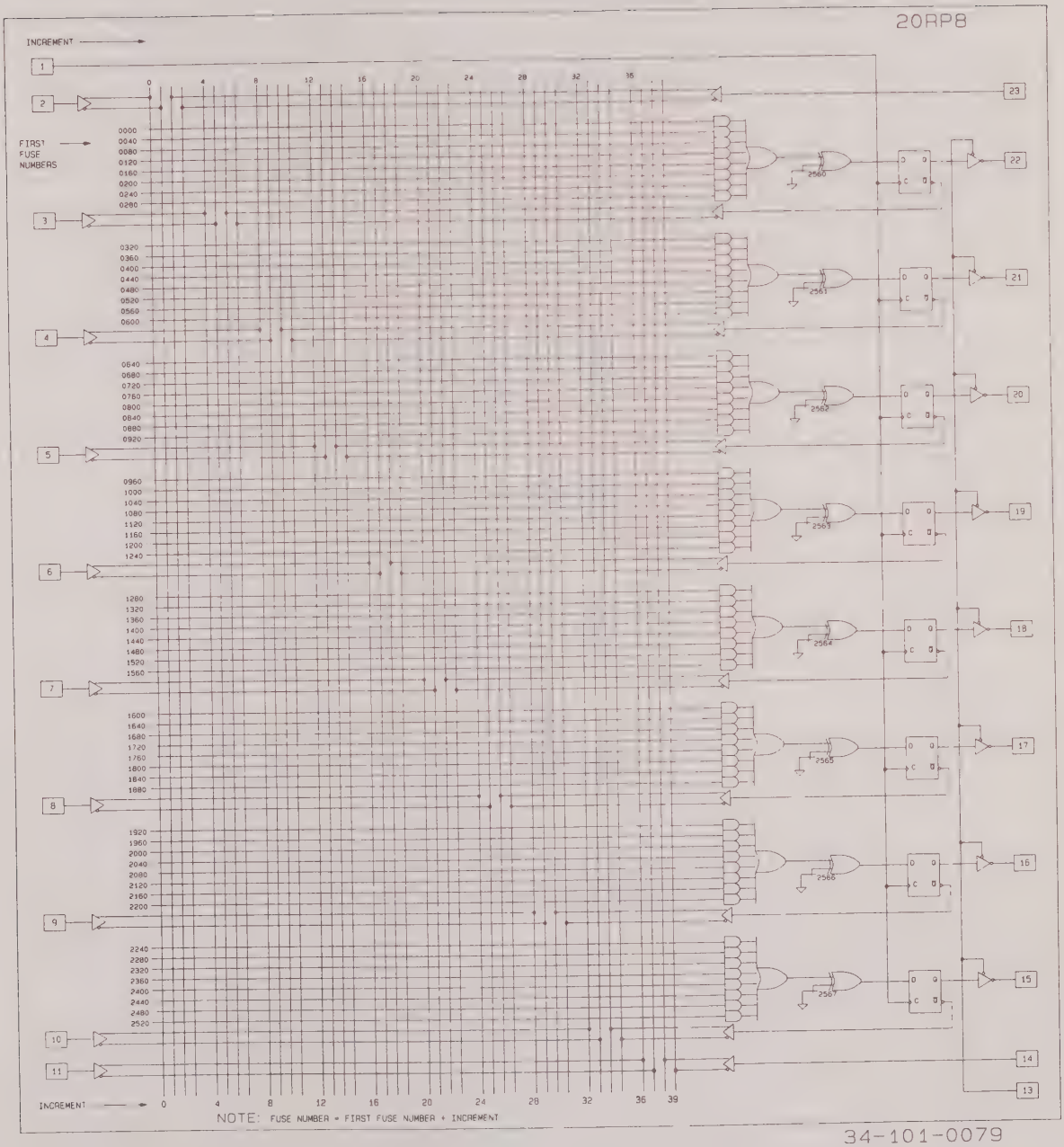
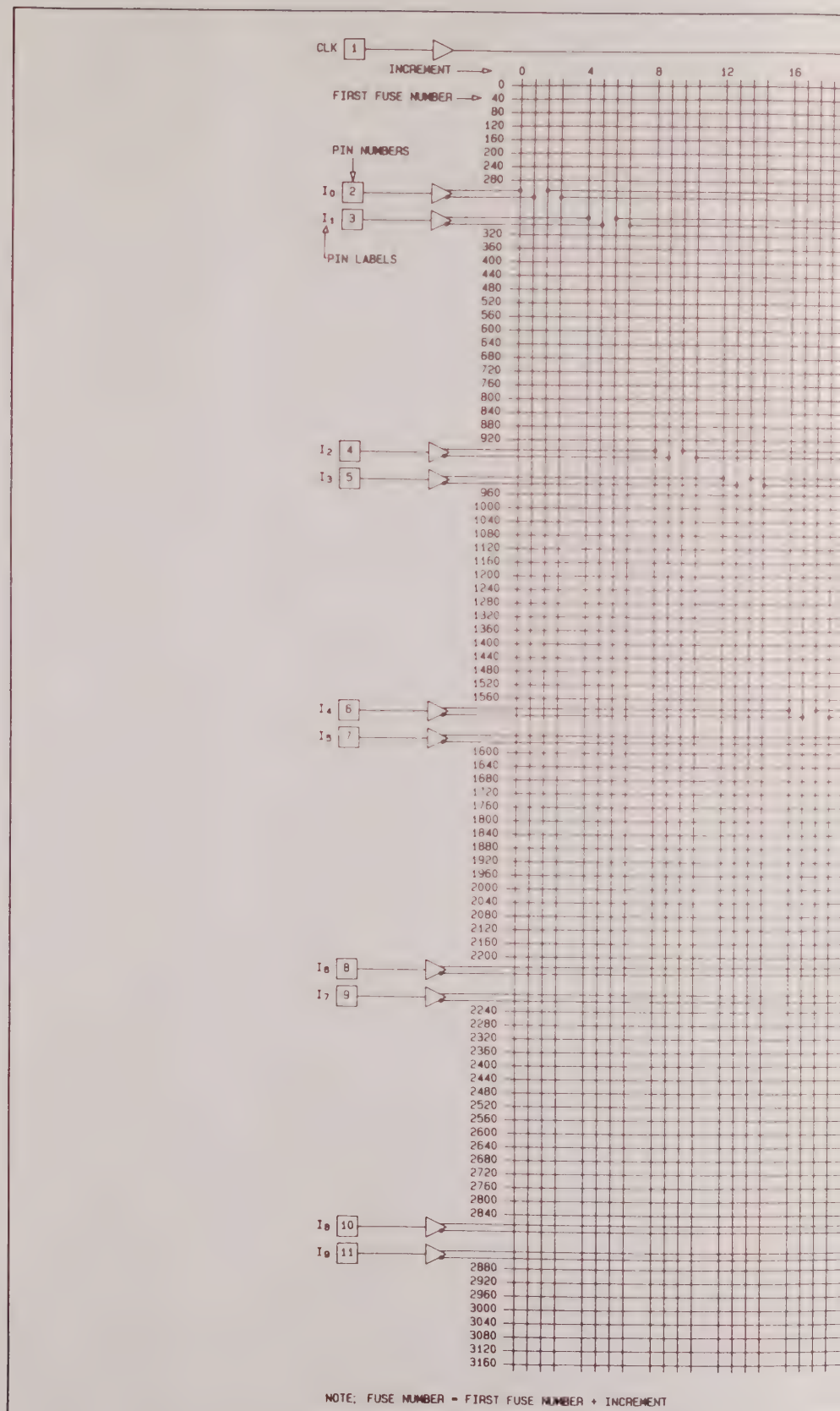
1200
1240
1280
1320
1360
1400
1440
1480
1520
1560
1600
1640
1680
1720
1760
1800
1840
1880
1920
1960
2000
2040
2080
2120
2160
2200
2240
2280
2320
2360
2400
2440
2480
2520
INCREMENT
0 4 8 12 16 20 24 28 32 36 39
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT
34-101-0077


20RP6
INCREMENT
FIRST FUSE NUMBERS
0000
0040
0080
0120
0160
0200
0240
0280
0320
0360
0400
0440
0480
0520
0560
0600
0640
0680
0720
0760
0800
0840
0880
0920
0960
1000
1040
1080
1120
1160
1200
1240
1280
1320
1360
1400
1440
1480
1520
1560
1600
1640
1680
1720
1760
1800
1840
1880
1920
1960
2000
2040
2080
2120
2160
2200
2240
2280
2320
2360
2400
2440
2480
2520
0 4 8 12 16 20 24 28 32 36 39
NOTE FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT
34-101-0078

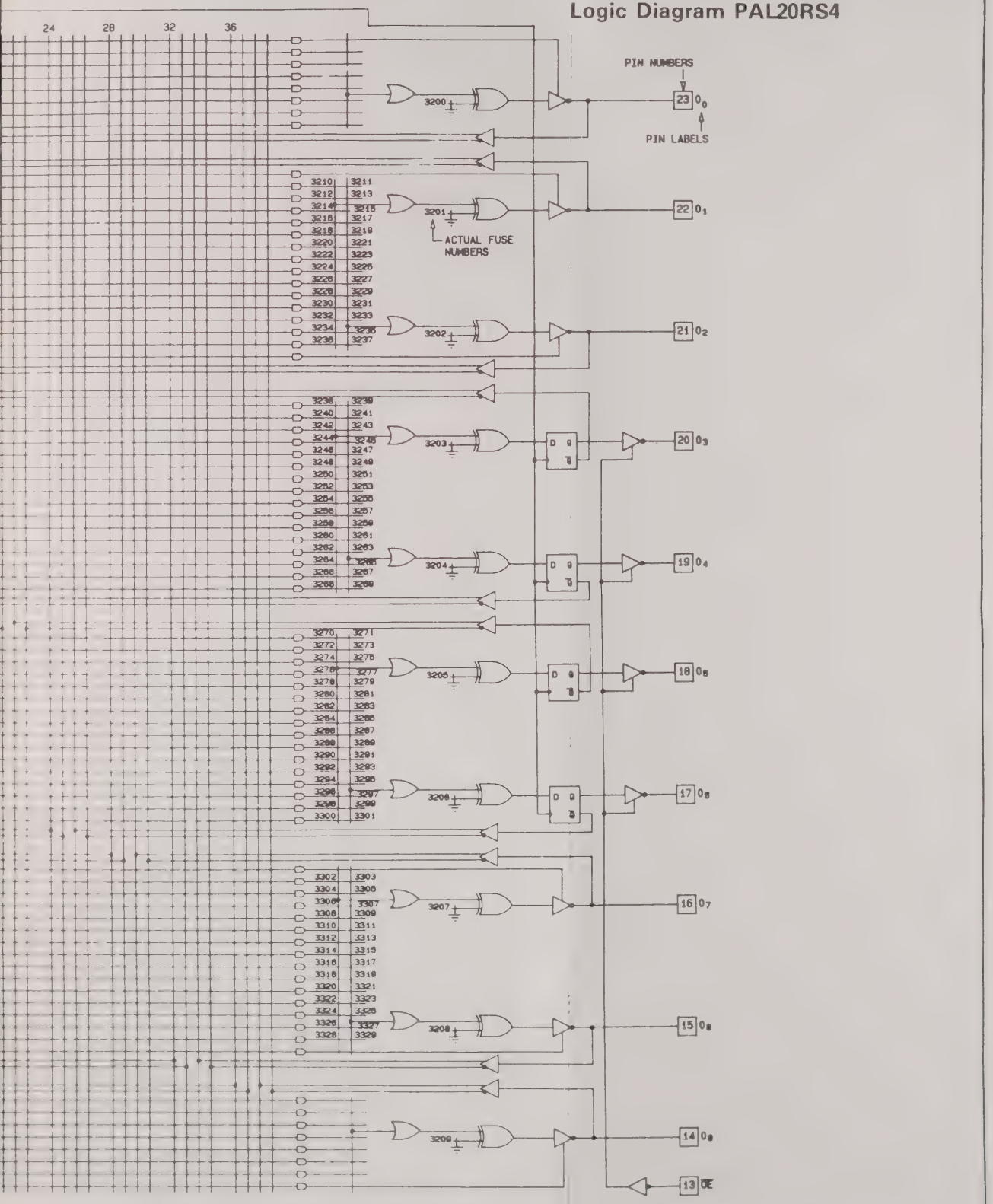

20RP8
INCREMENT
FIRST FUSE NUMBERS
0 4 8 12 16 20 24 28 32 36
0000 0040 0080 0120 0160 0200 0240 0280
0320 0360 0400 0440 0480 0520 0560 0600
0640 0680 0720 0760 0800 0840 0880 0920
0960 1000 1040 1080 1120 1160 1200 1240
1280 1320 1360 1400 1440 1480 1520 1560
1600 1640 1680 1720 1760 1800 1840 1880
1920 1960 2000 2040 2080 2120 2160 2200
2240 2280 2320 2360 2400 2440 2480 2520
1 2 3 4 5 6 7 8 9 10 11
23 22 21 20 19 18 17 16 15 14 13
2560 2561 2562 2563 2564 2565 2566 2567
INCREMENT 0 4 8 12 16 20 24 28 32 36 39
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

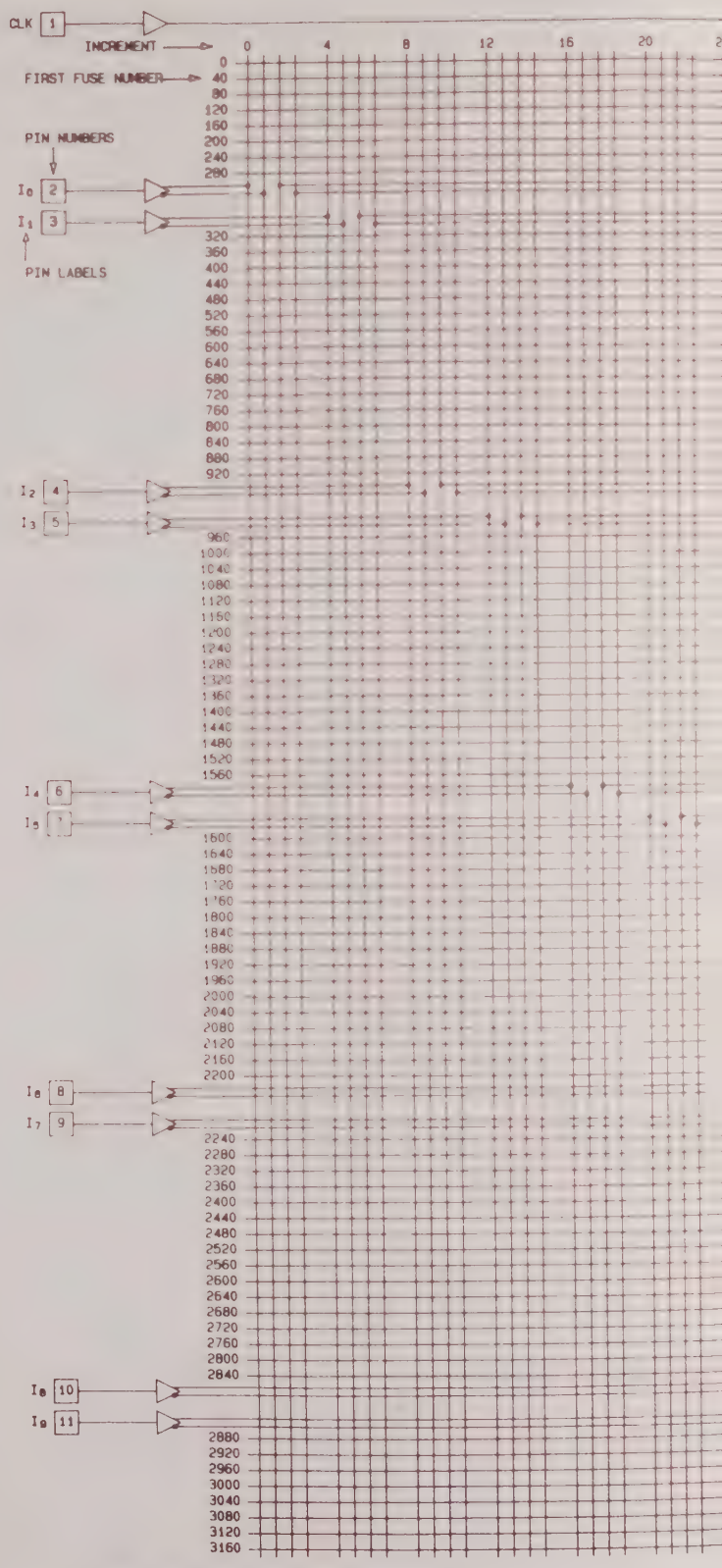
34-101-0079



NOTE; FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

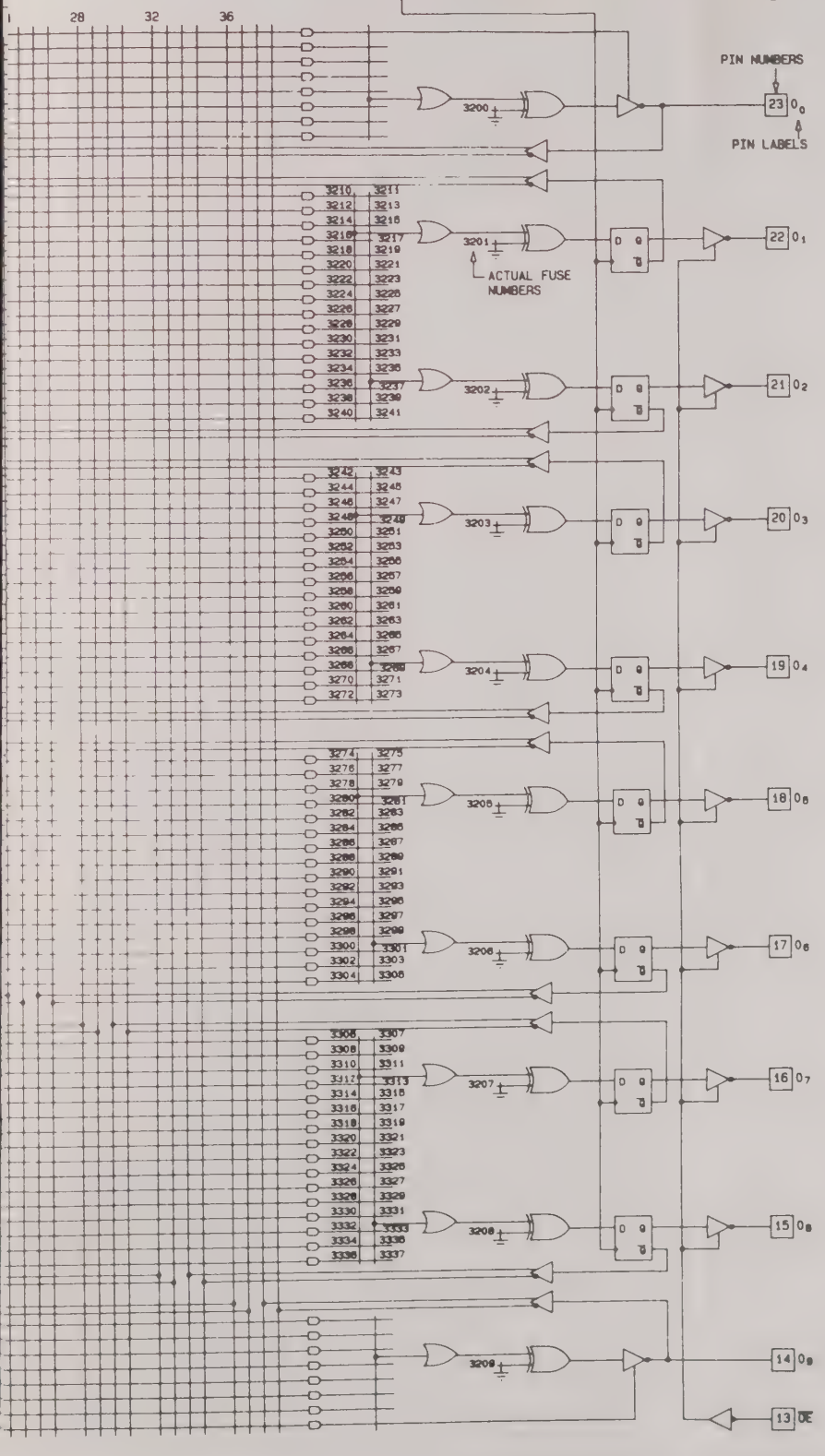
Logic Diagram PAL20RS4

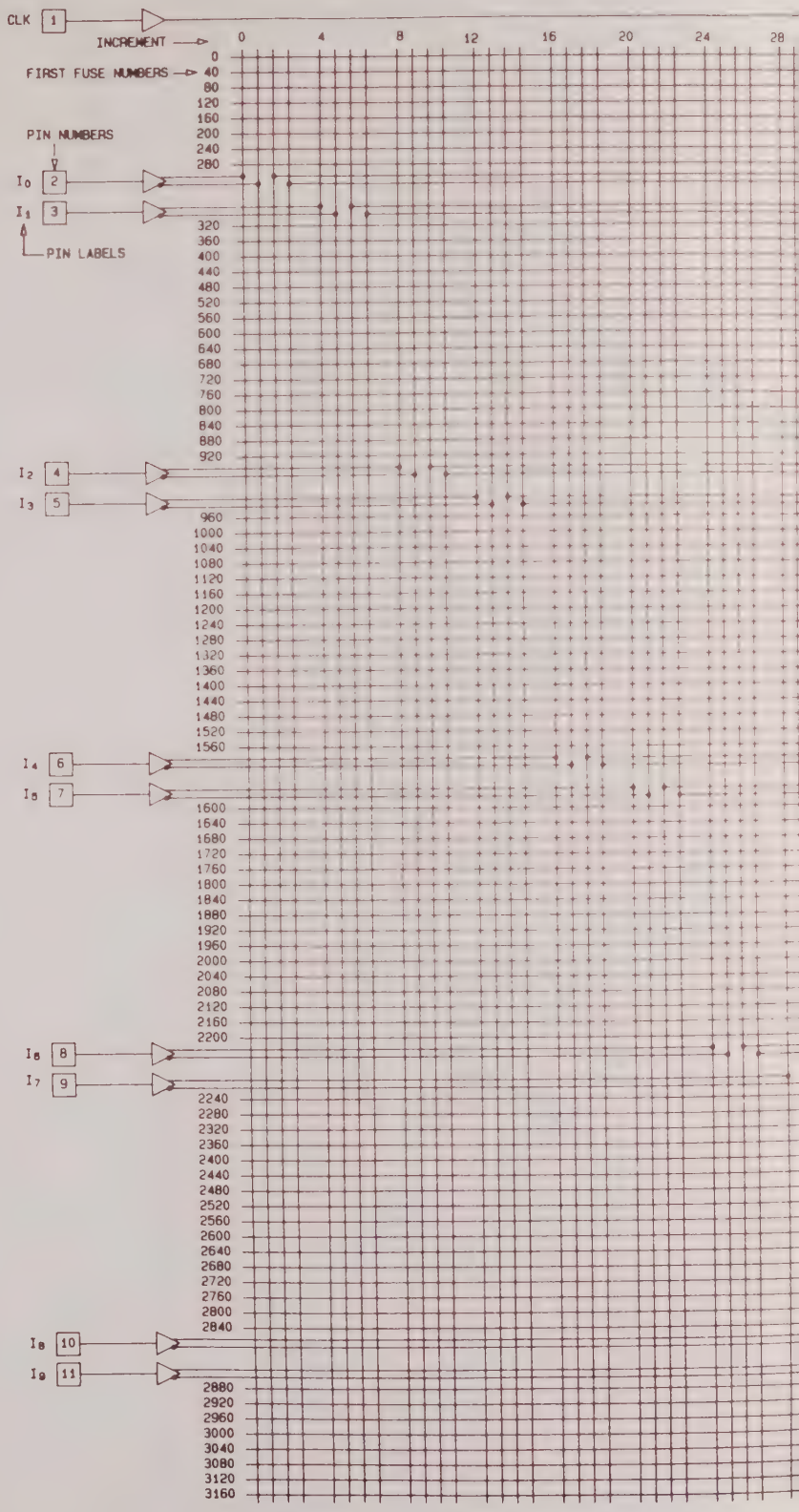




NOTE: FUSE NUMBER =FIRST FUSE NUMBER+ INCREMENT

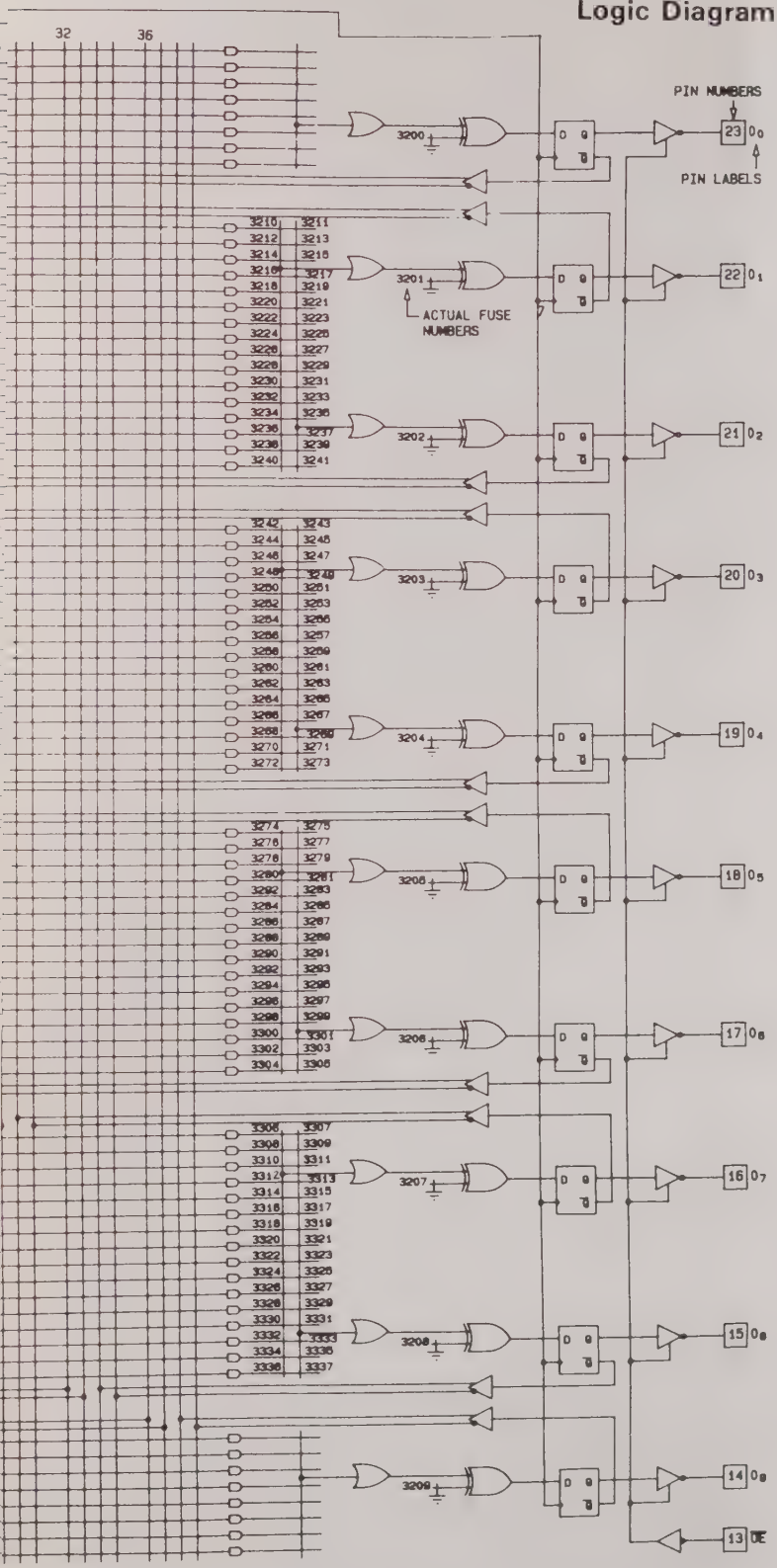
Logic Diagram PAL20RS8



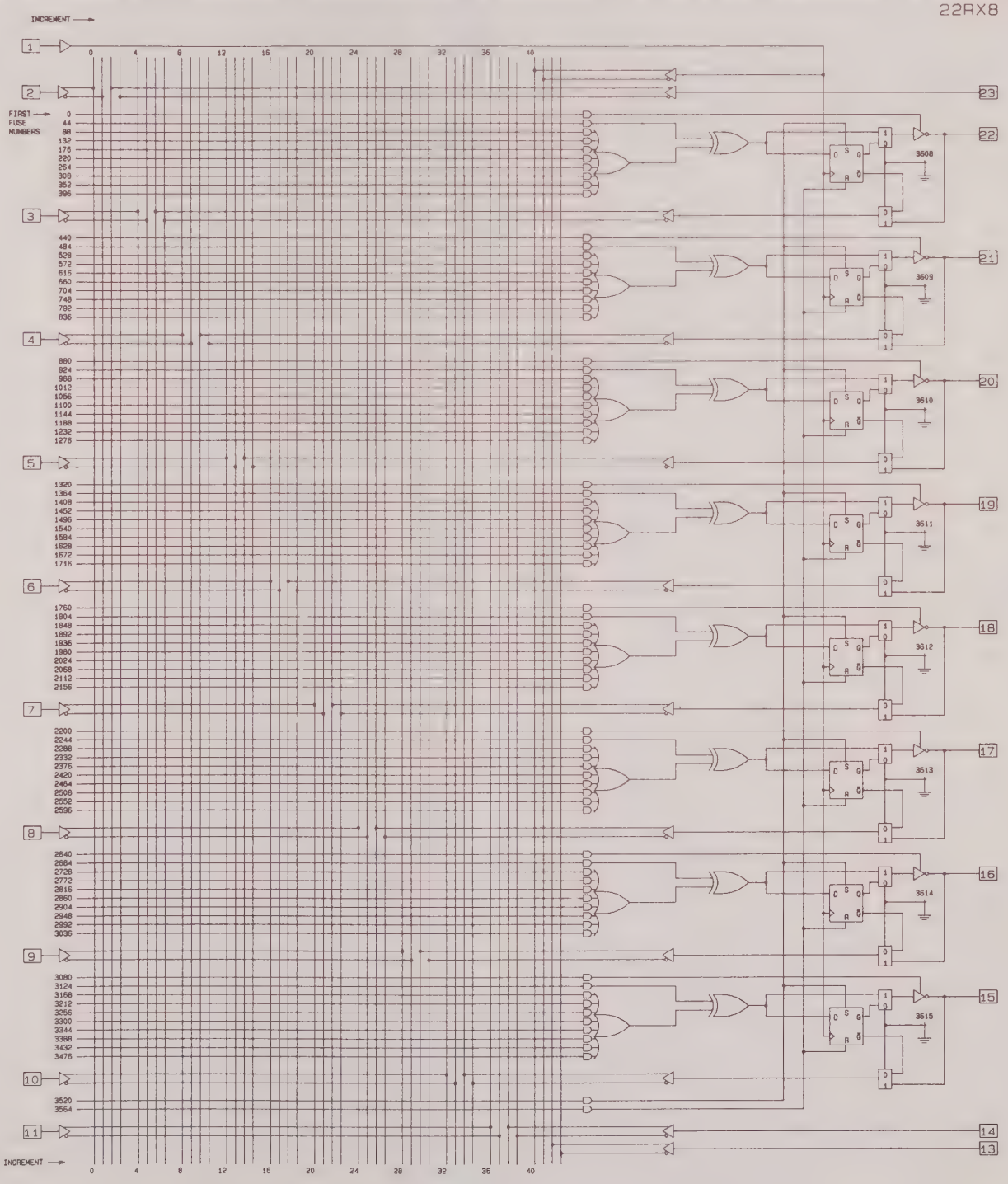


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL20RS10

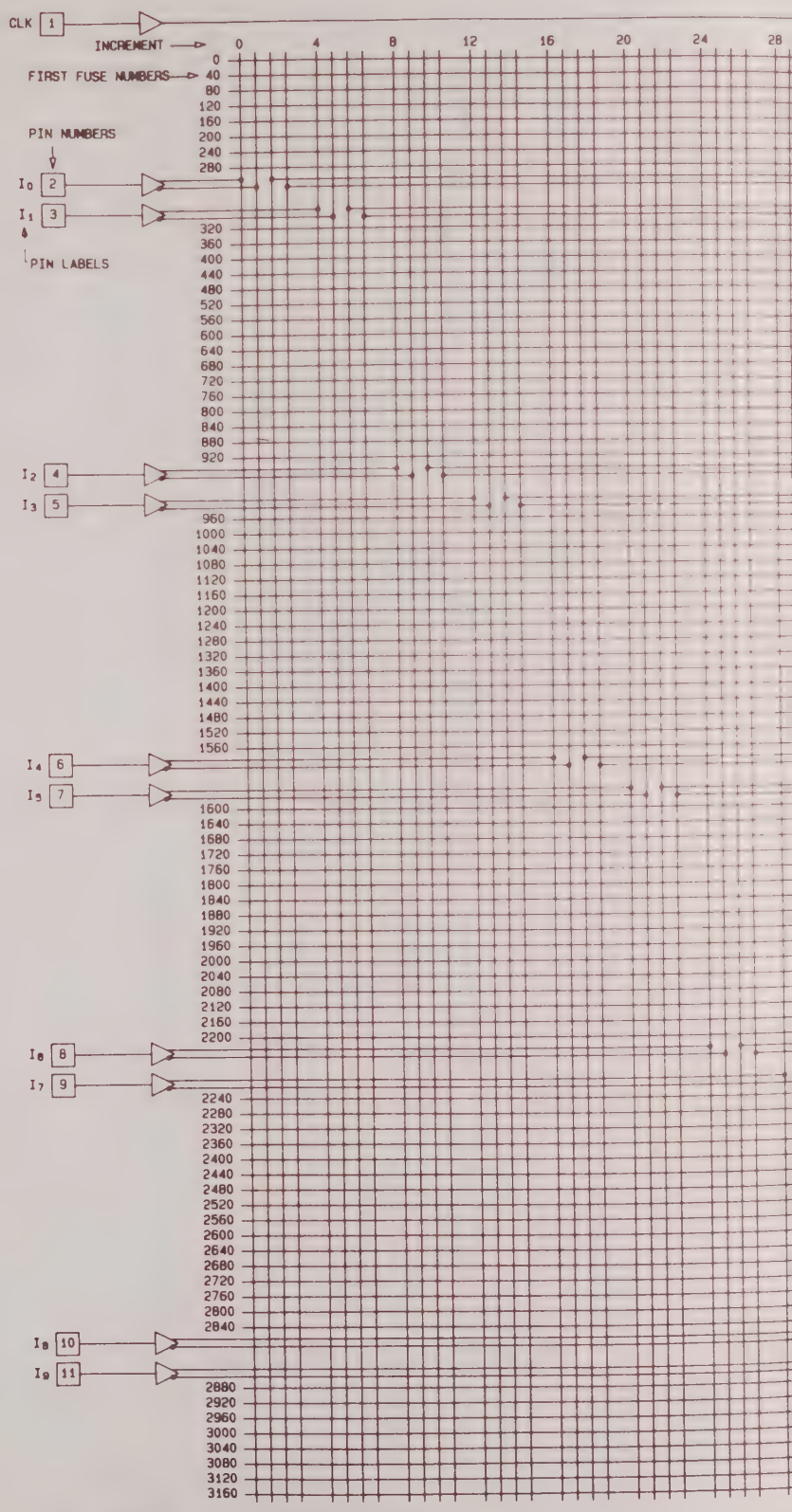


22RX8



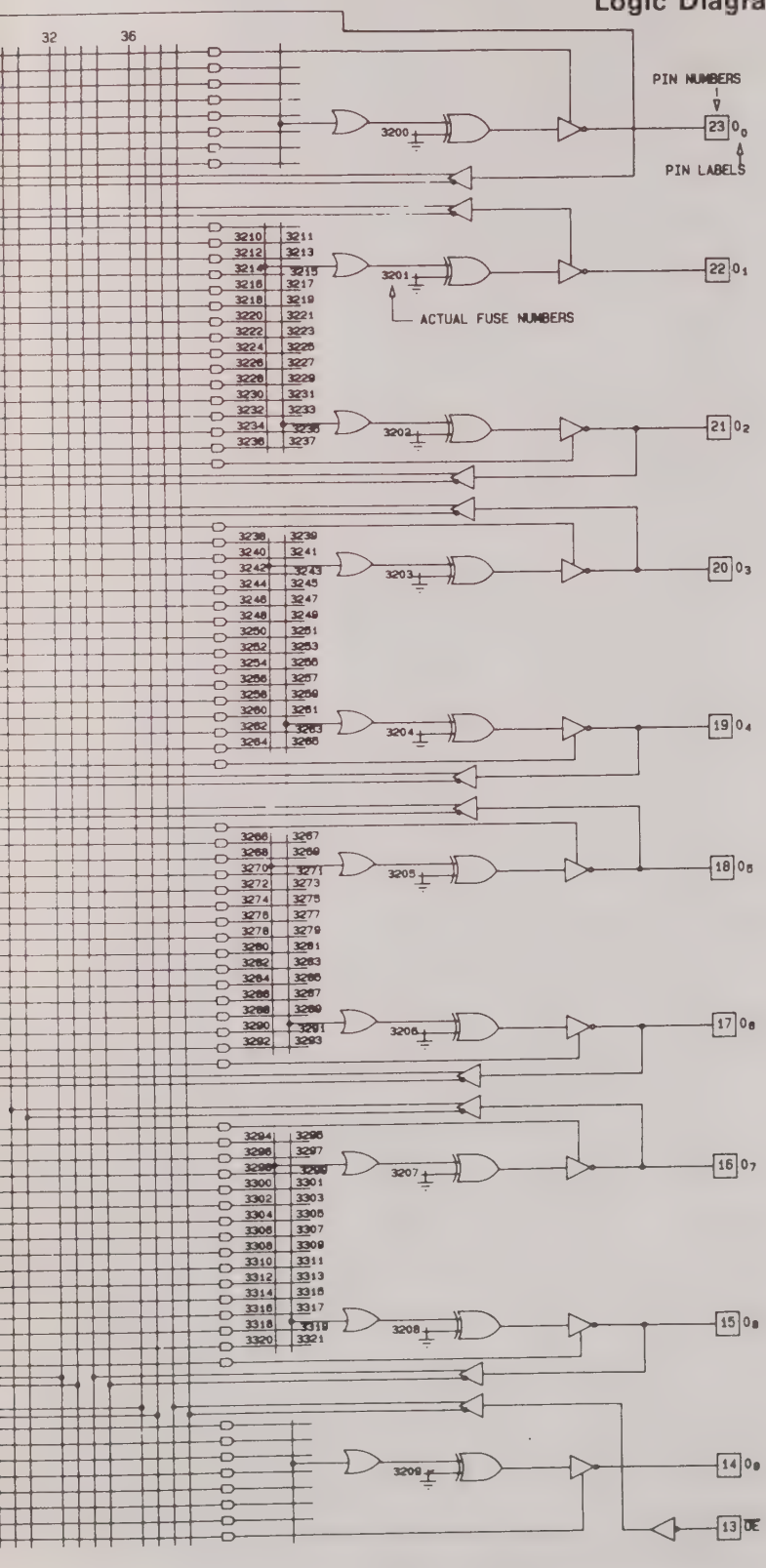
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

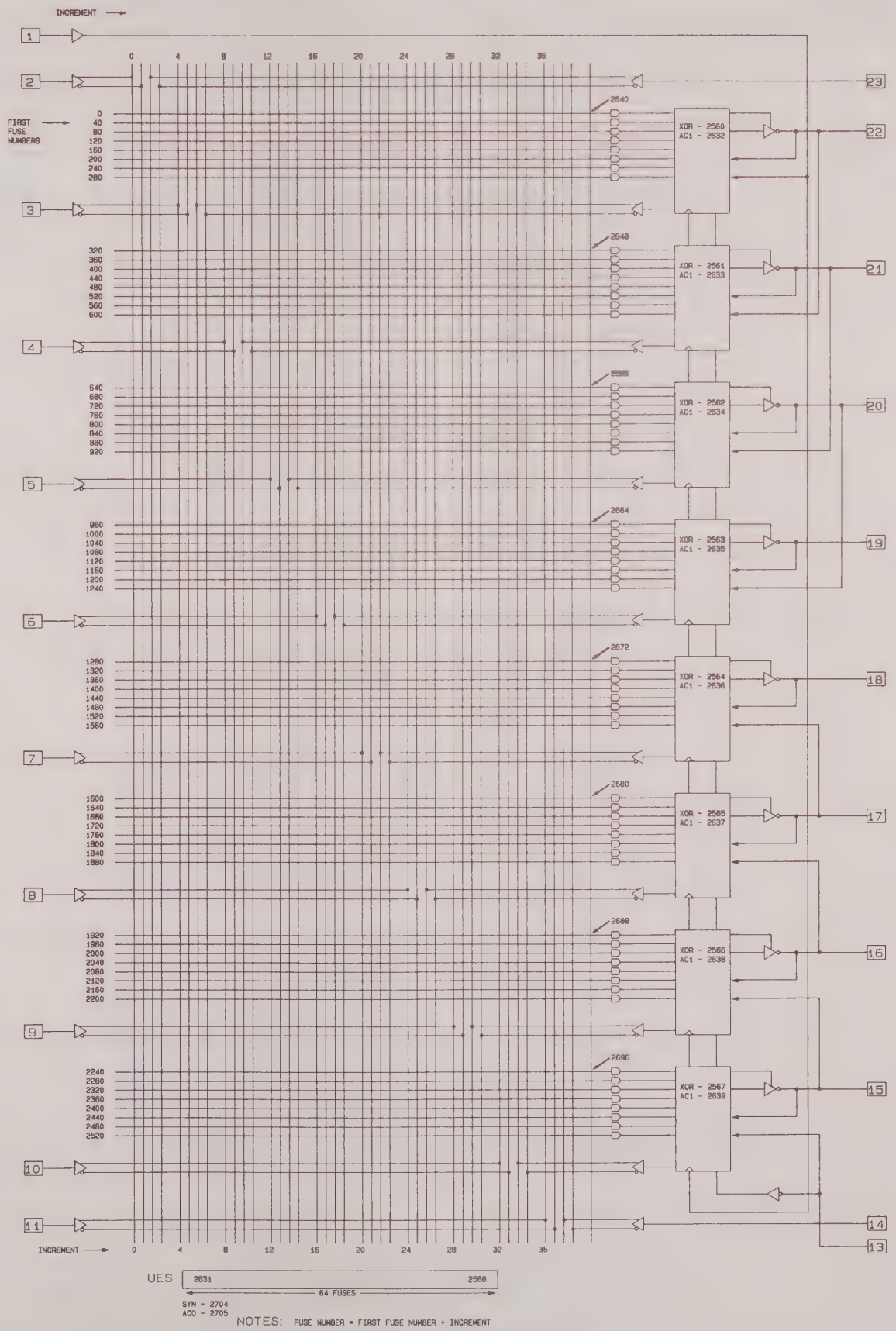
34-101-0074



NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

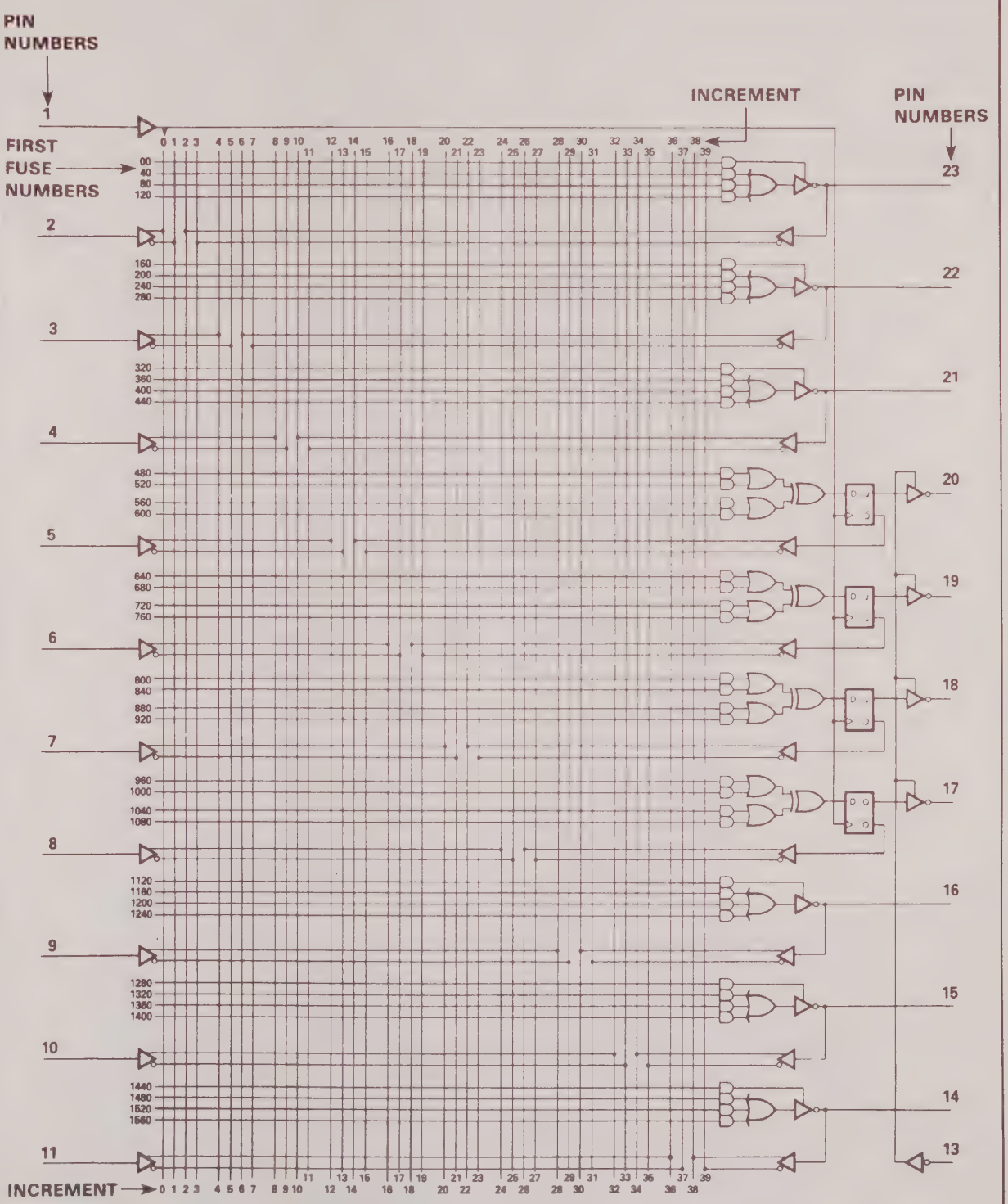
Logic Diagram PAL20S10





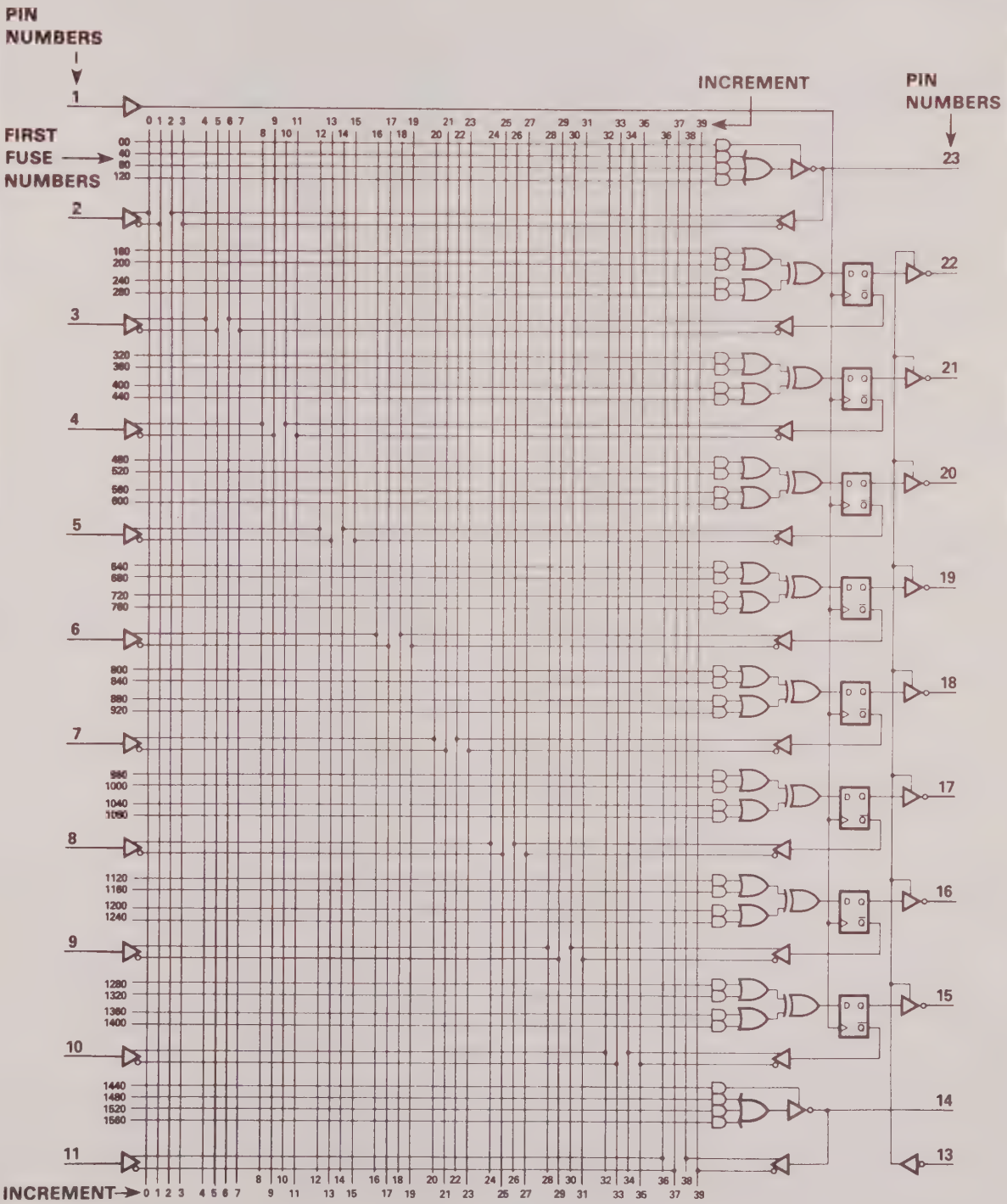
NOTES: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL20X4



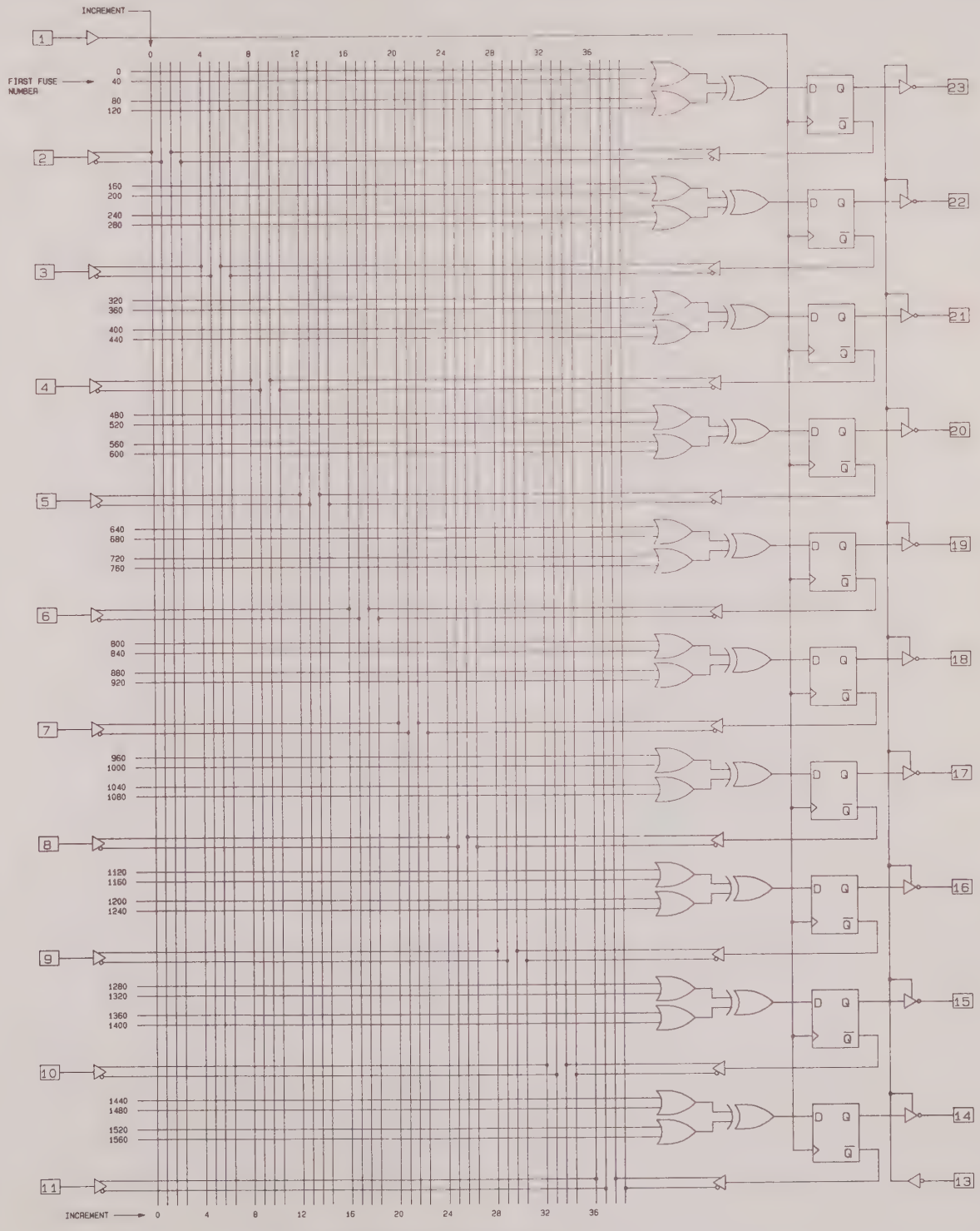
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram PAL20X8



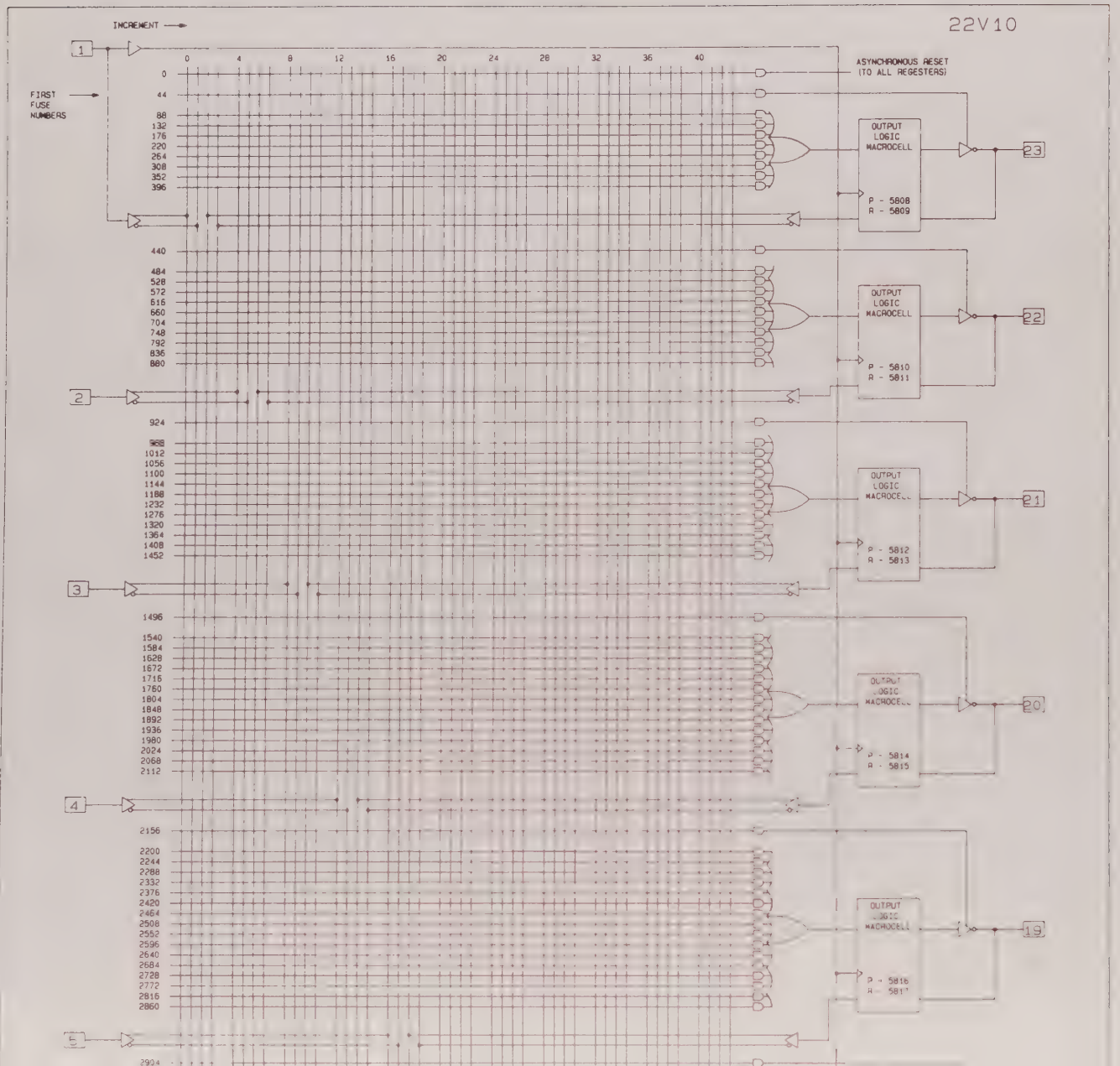
NOTE: Fuse Number = First Fuse Number + Increment

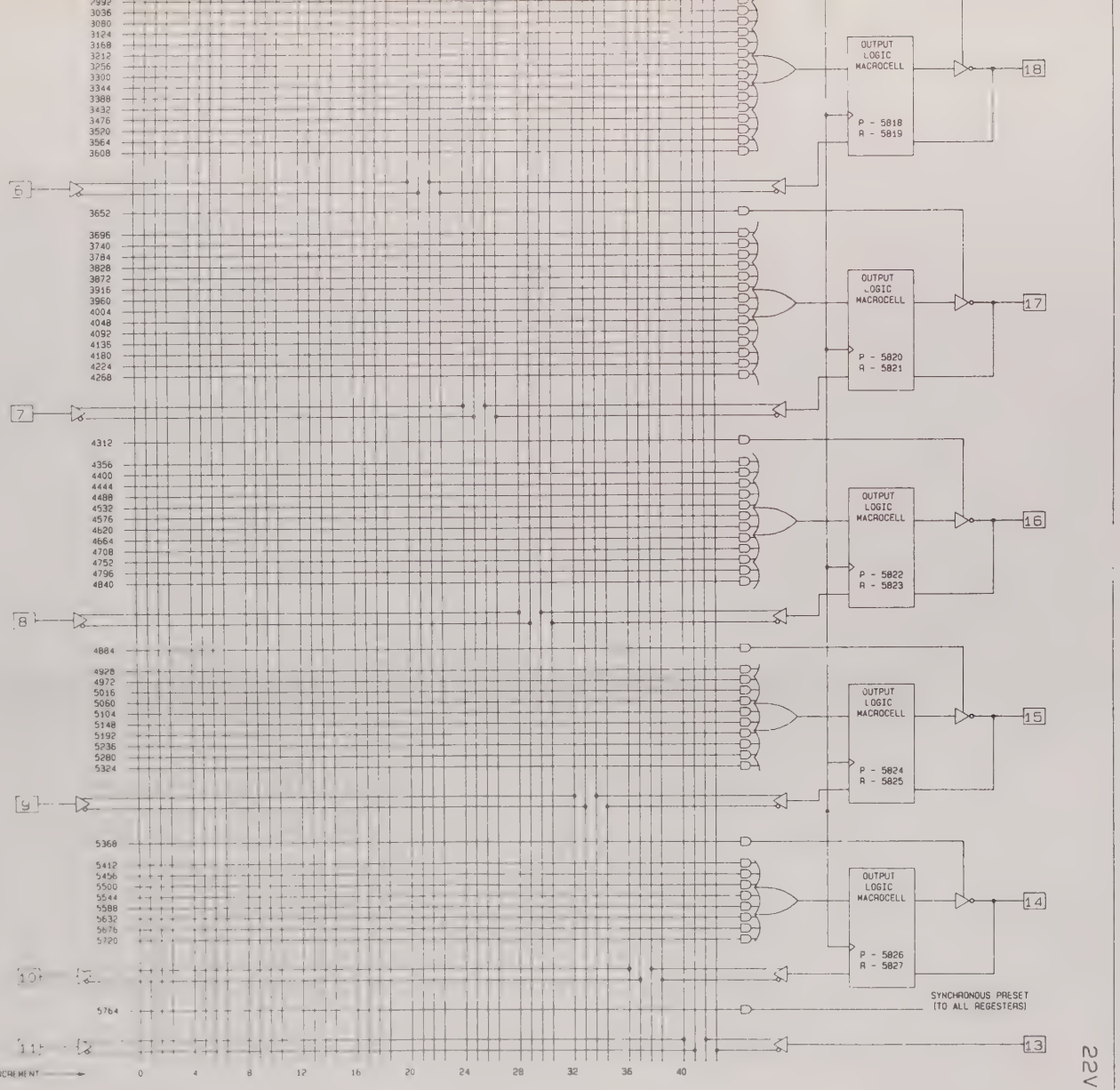
20X10



NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

34-101-0034


22V10
INCREMENT
FIRST FUSE NUMBERS
ASYNCHRONOUS RESET (TO ALL REGESTERS)
OUTPUT LOGIC MACROCELL
P - 5808
R - 5809
P - 5810
R - 5811
P - 5812
R - 5813
P - 5814
R - 5815
P - 5816
R - 5817
23
22
21
20
19
1
2
3
4
5

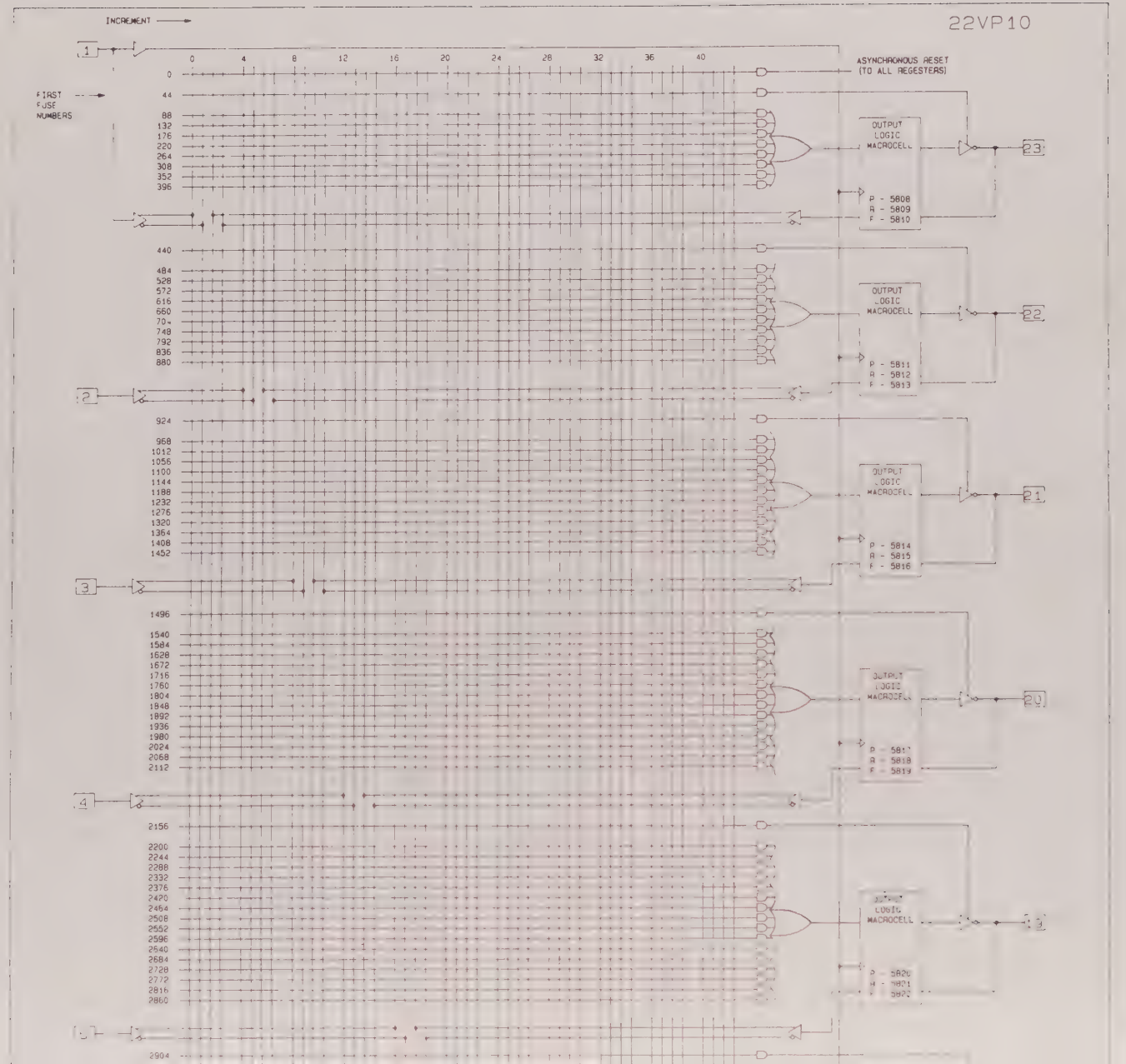


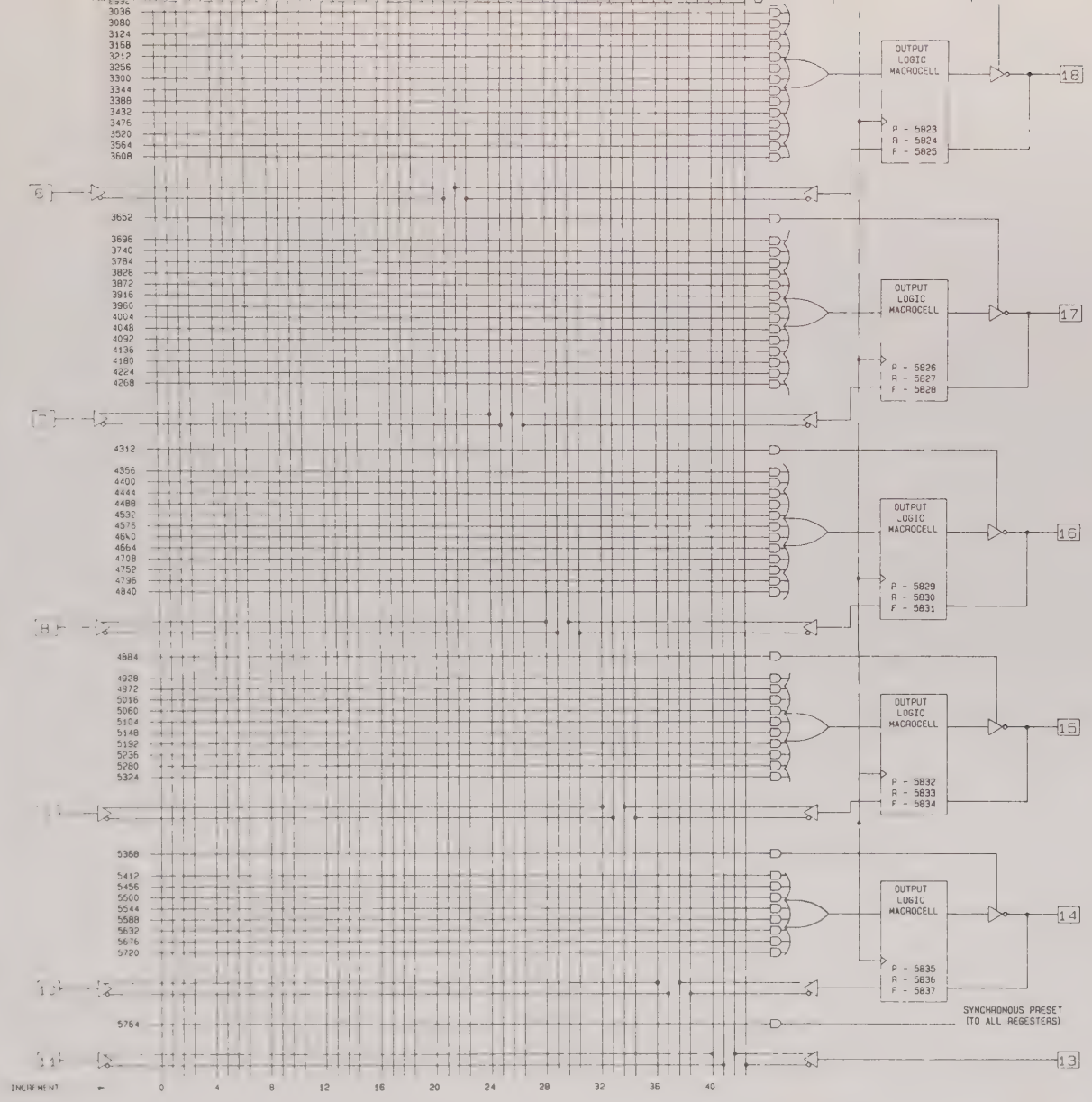
NOTES:
1 INSIDE EACH MACROCELL, THE "P" FUSE NUMBER IS THE POLARITY FUSE, AND THE "A" FUSE IS THE REGESTER FUSE
2 FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

34-101-0008

22V10

34-101-0008


22VP10
INCREMENT
FIRST FUSE NUMBERS
ASYNCHRONOUS RESET (TO ALL REGESTERS)
OUTPUT LOGIC MACROCELL
P - 5808
R - 5809
E - 5810
P - 5811
R - 5812
E - 5813
P - 5814
R - 5815
E - 5816
P - 5817
R - 5818
E - 5819
P - 5820
R - 5821
E - 5822



NOTES:

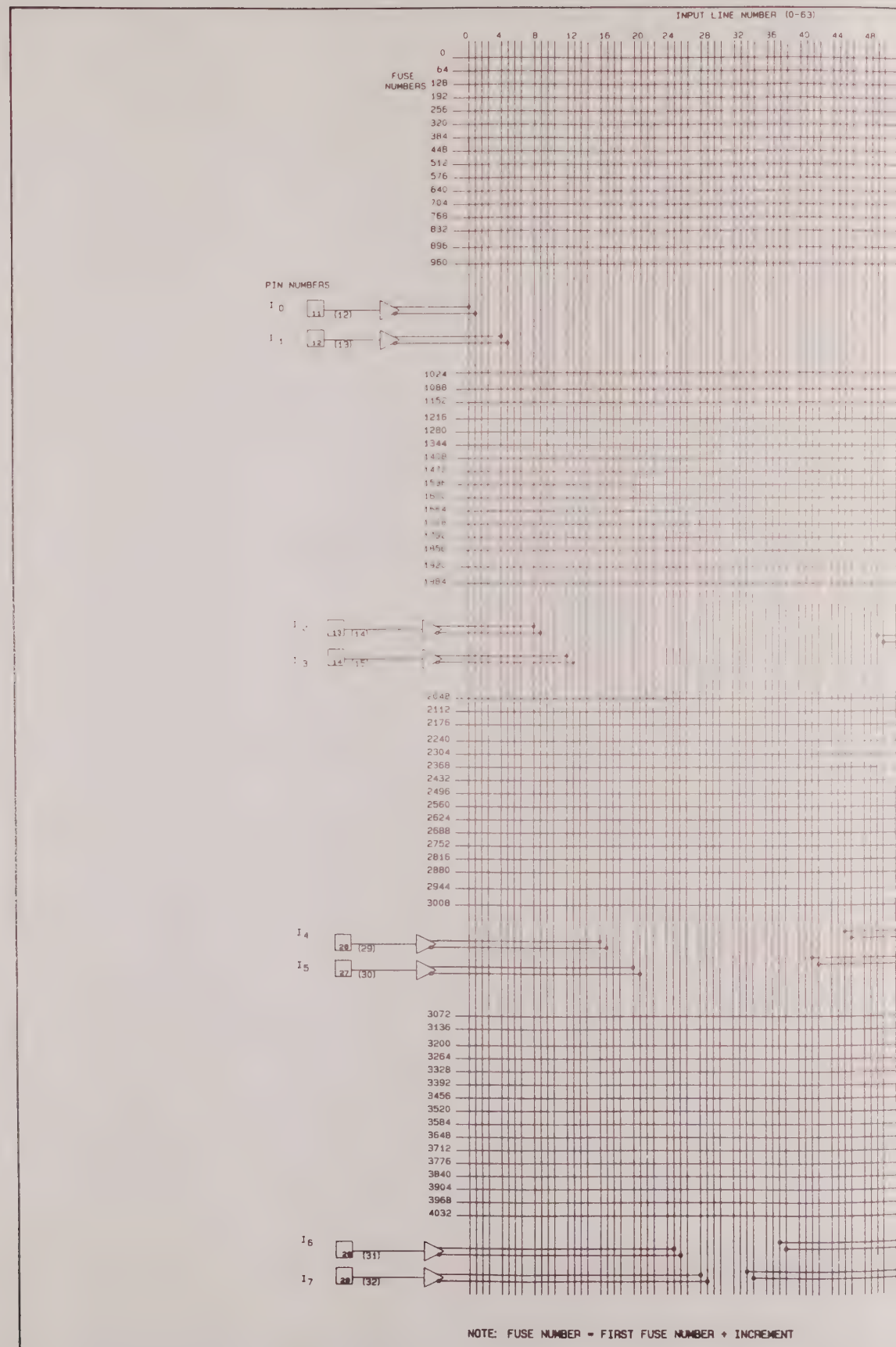
1 INSIDE EACH MACROCELL, THE "P" FUSE NUMBER IS THE POLARITY FUSE, THE "A" FUSE NUMBER IS THE REGISTER FUSE, AND THE "F" FUSE NUMBER IS THE FEEDBACK FUSE

2 FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

34-101-0082

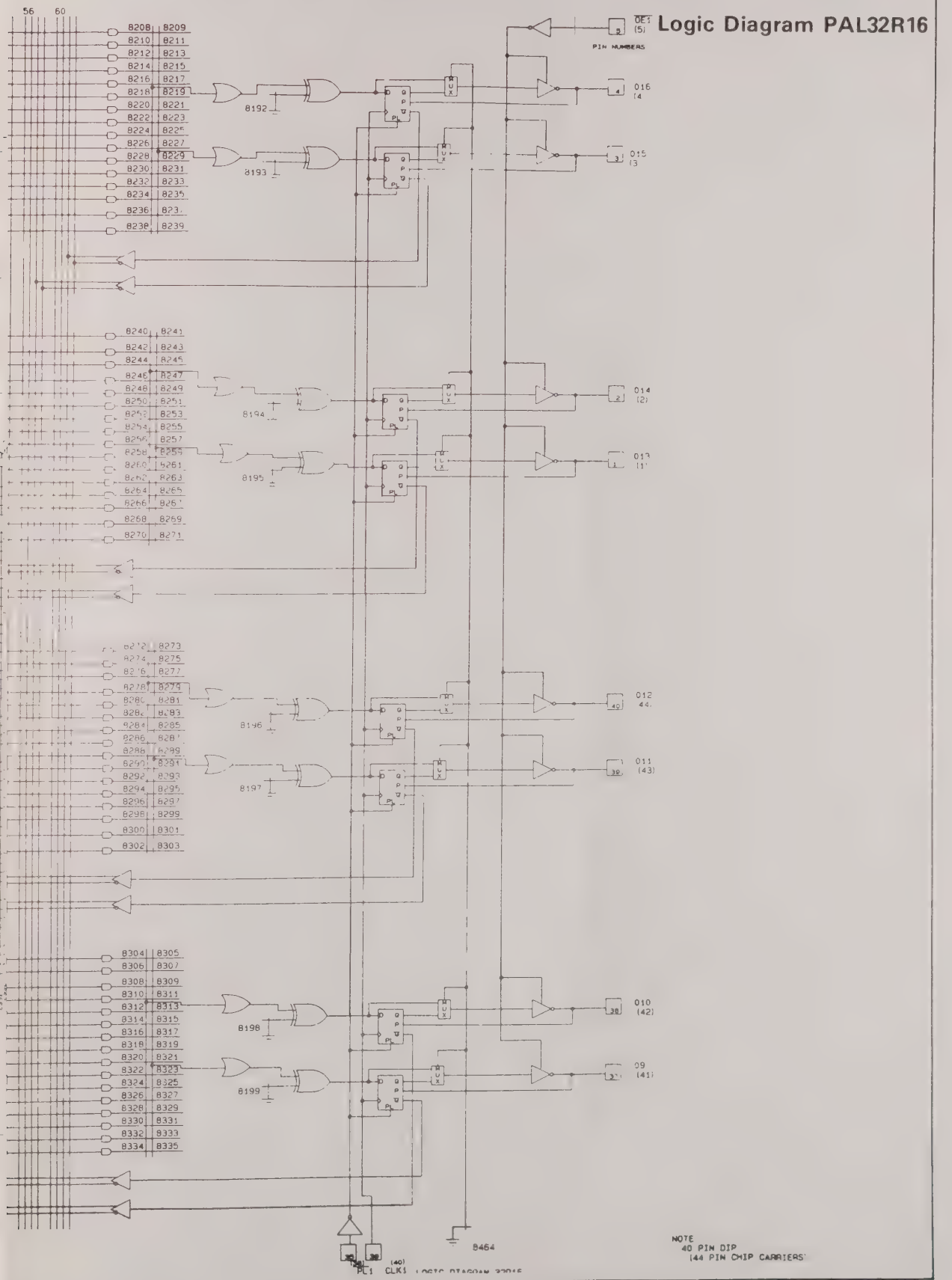
22VP10

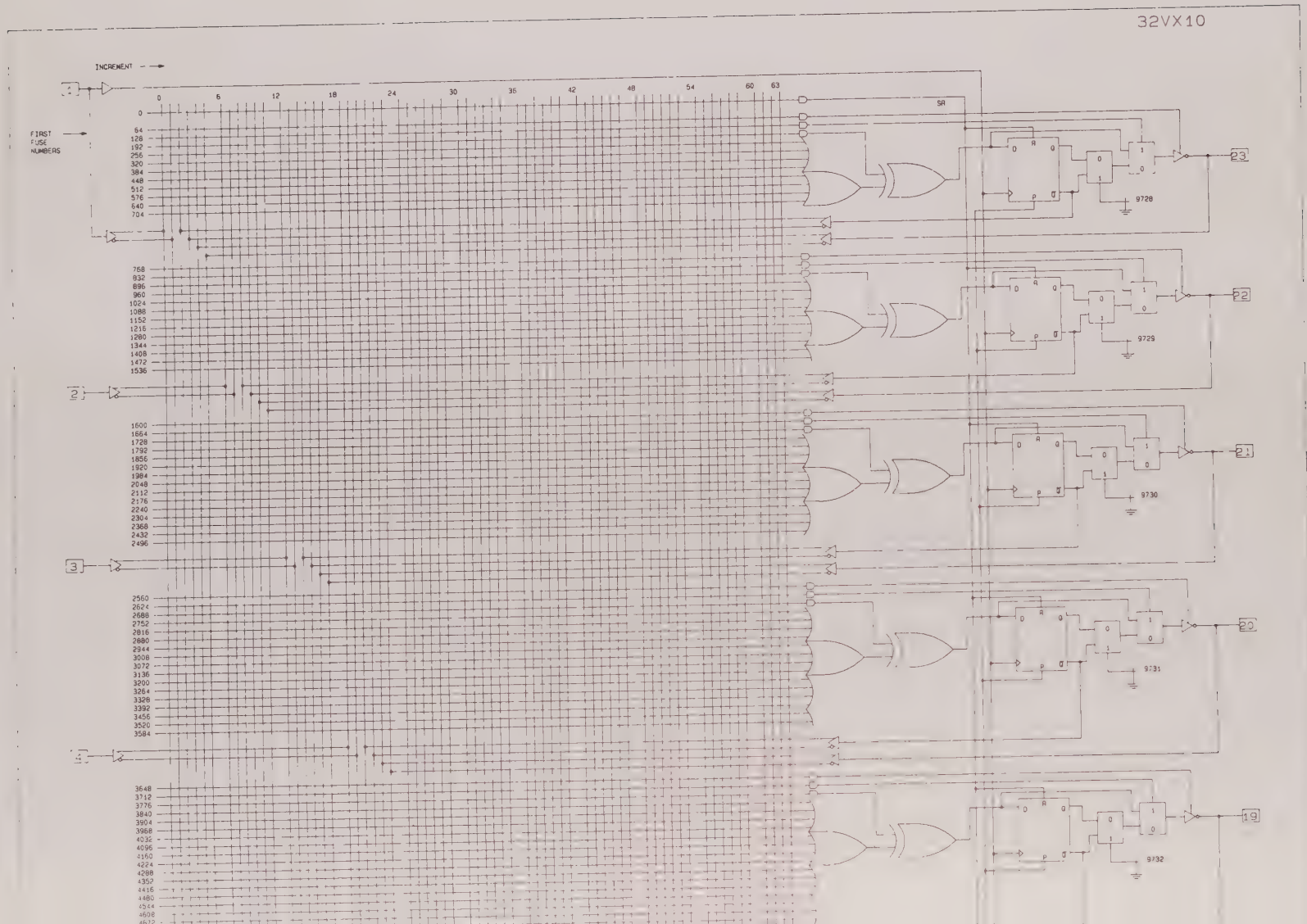
34-101-0082

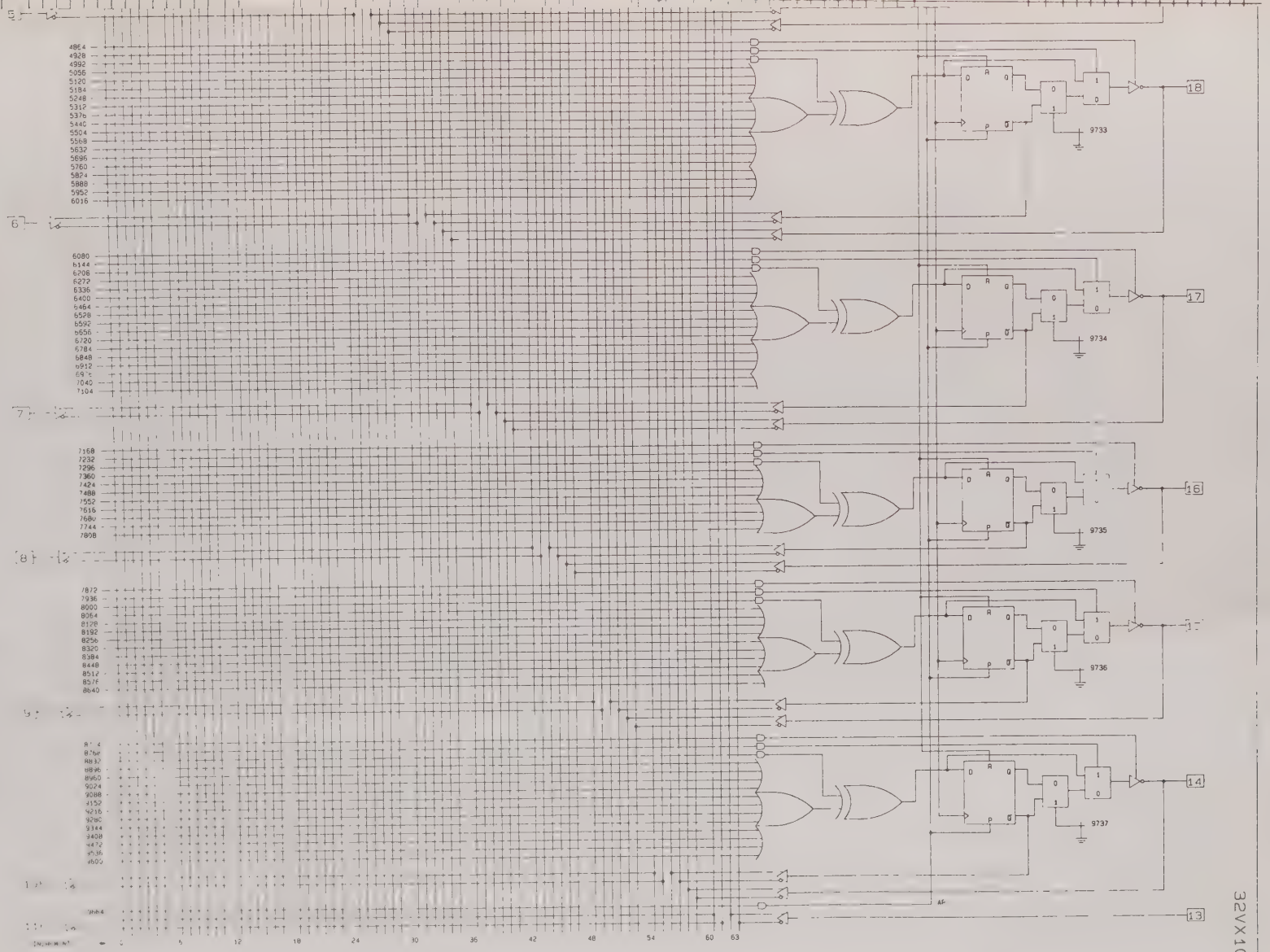


NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram PAL32R16

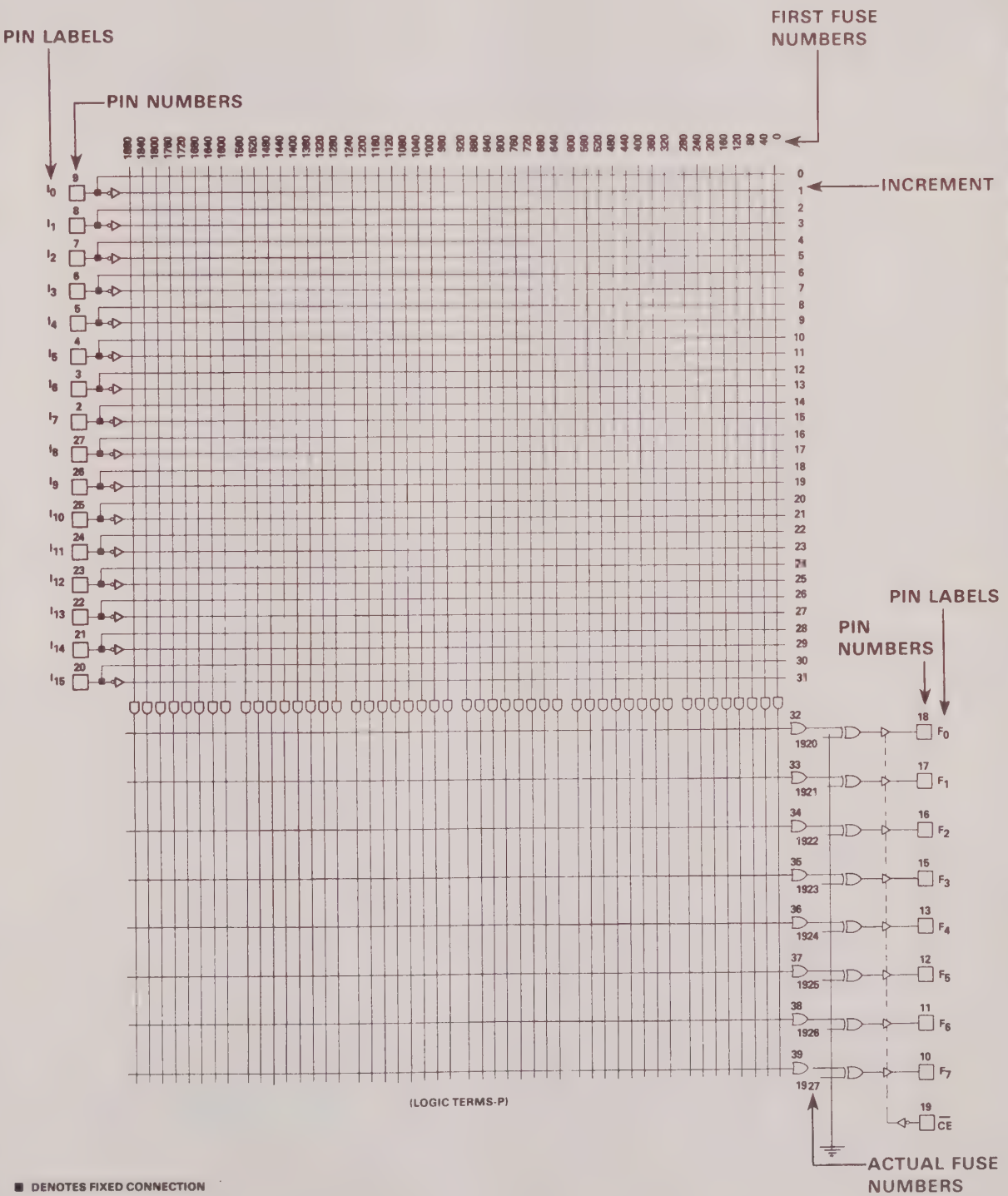



32VX10
INCREMENT
FIRST FUSE NUMBERS
SA
23
22
21
20
19
9728
9729
9730
9731
9732


18
17
16
15
14
13
9733
9734
9735
9736
9737
32VX10
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

34-101-0075

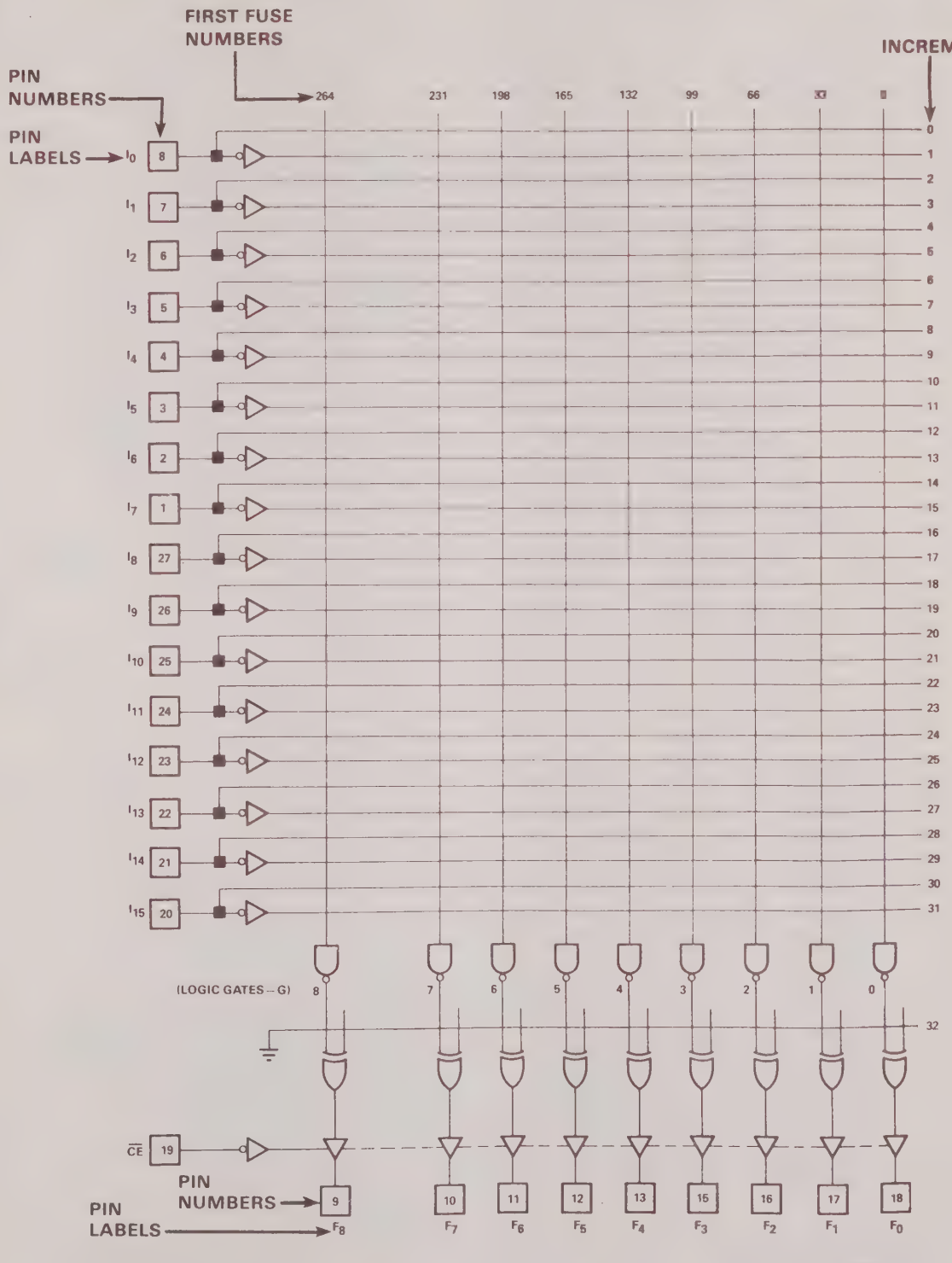
Logic Diagram 82S100/101



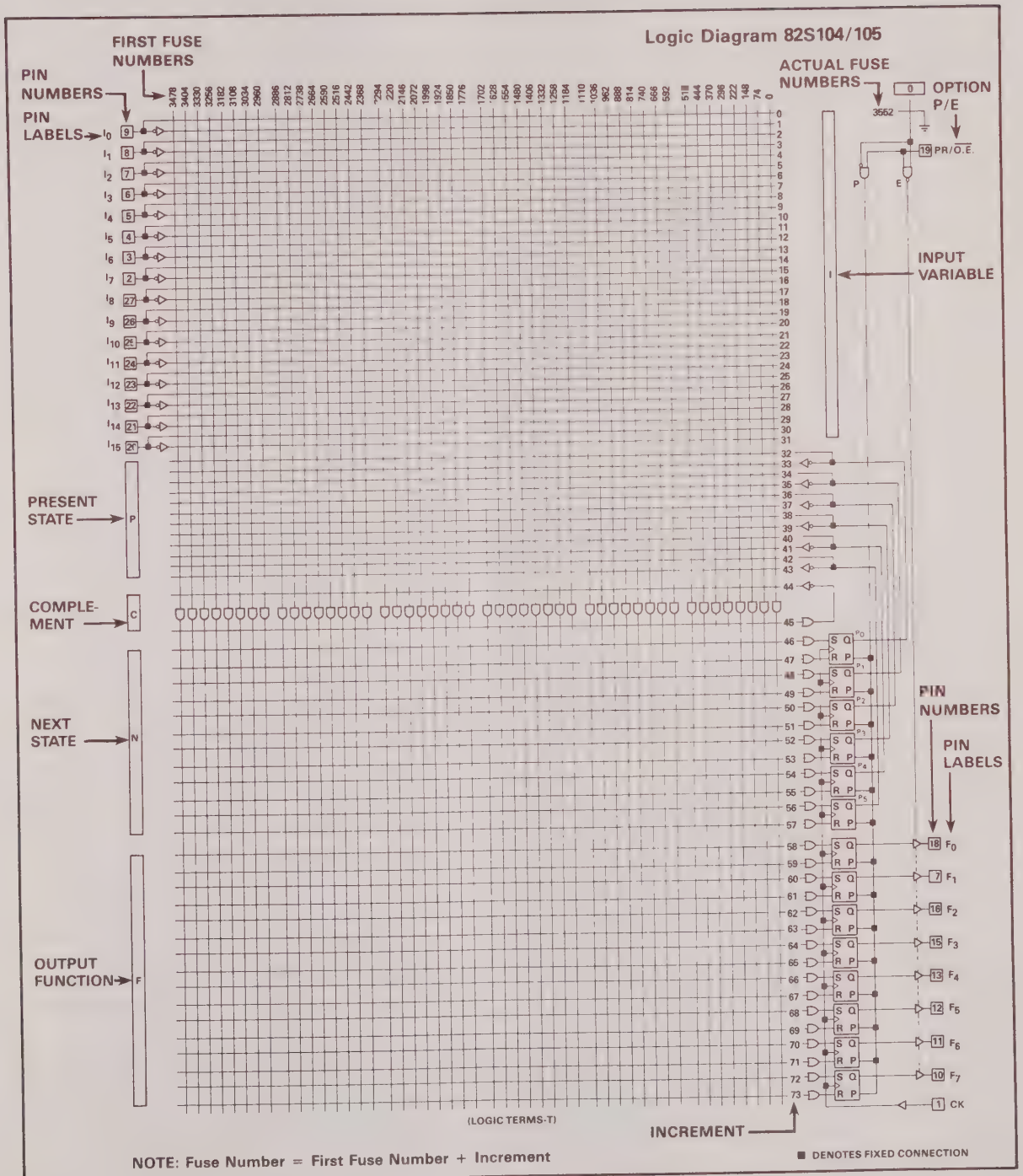
■ DENOTES FIXED CONNECTION

NOTE: Fuse Number = First Fuse Number + Increment

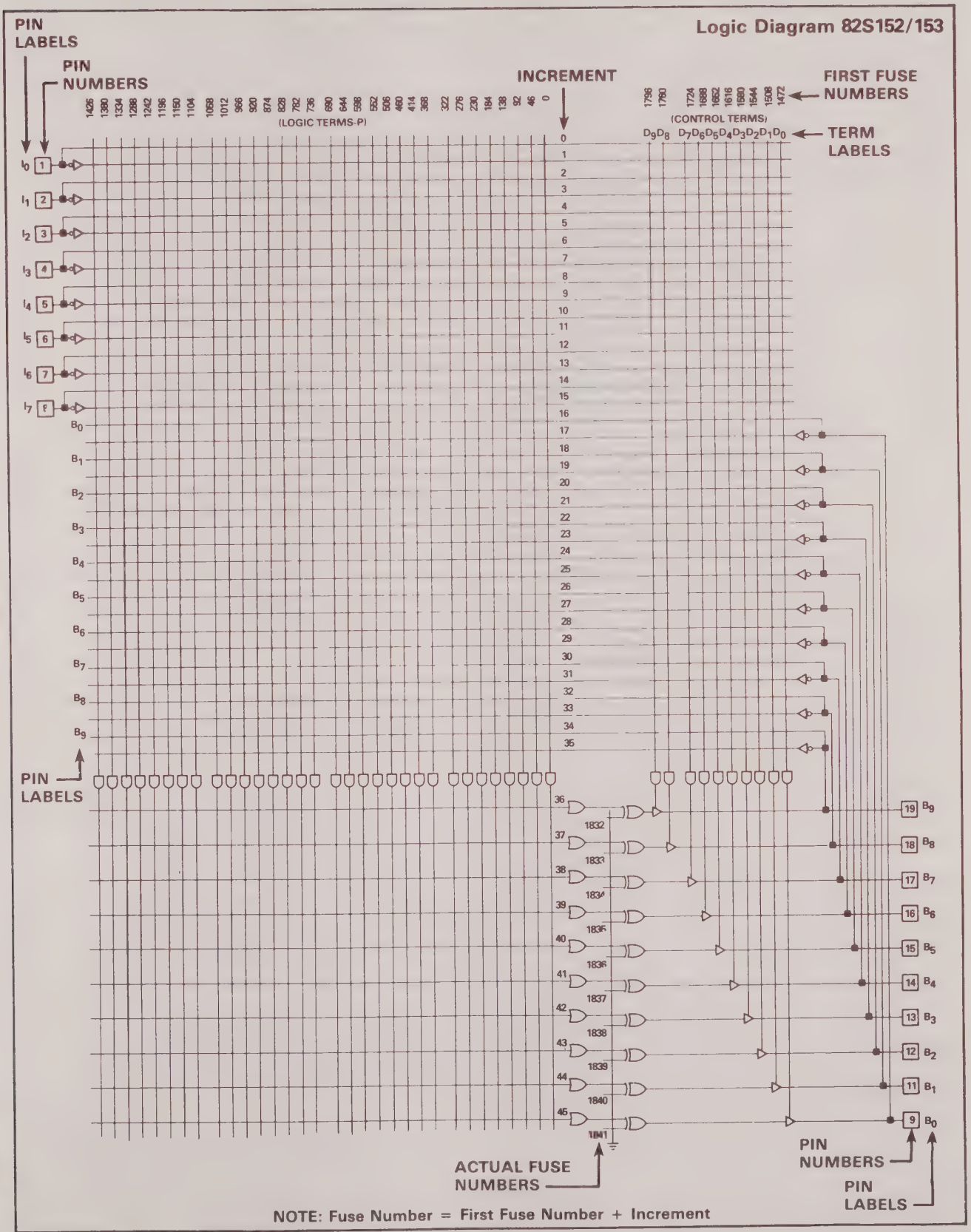
Logic Diagram 82S102/103



NOTE: Fuse Number = First Fuse Number + Increment

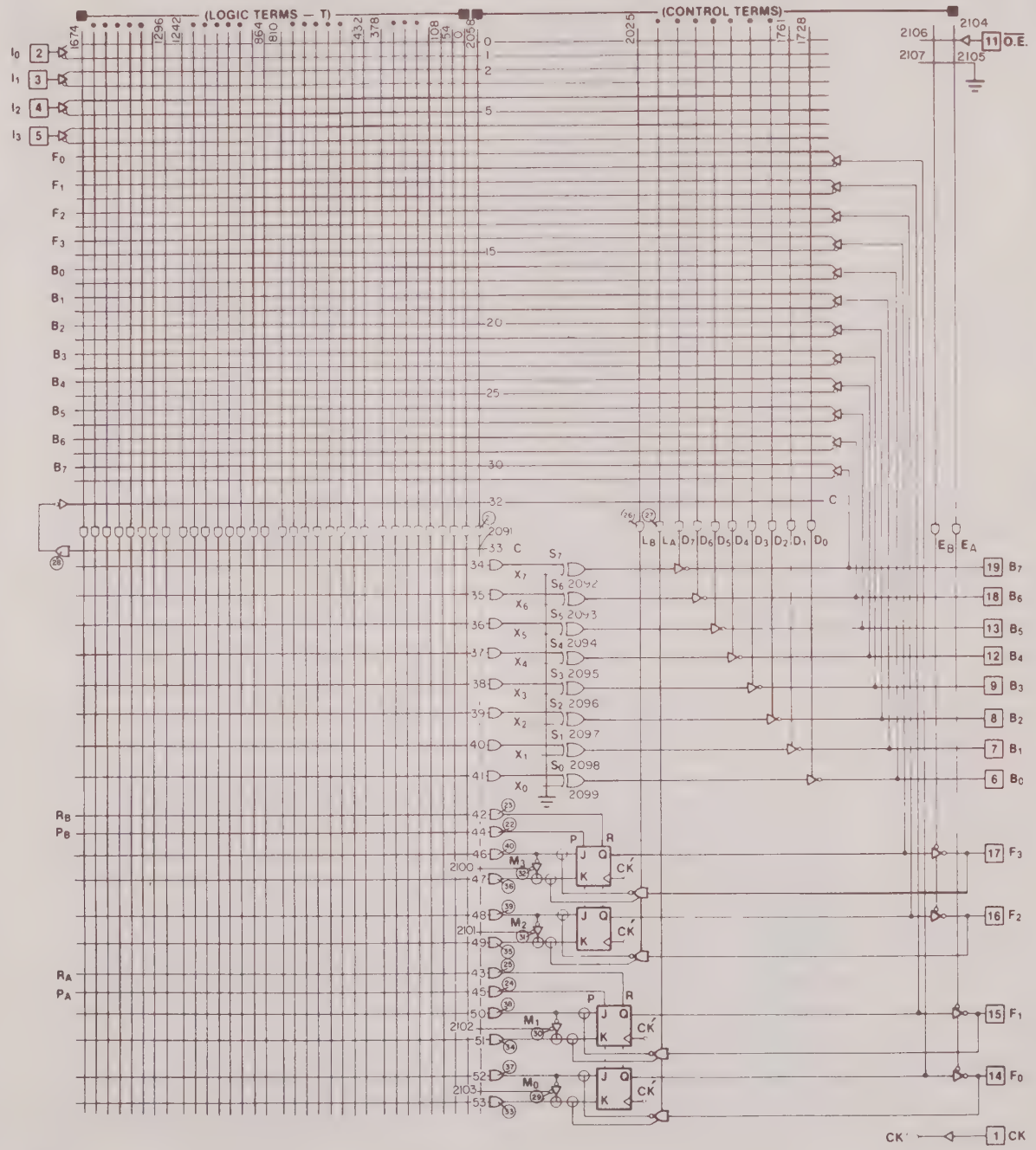

Logic Diagram 82S104/105
FIRST FUSE NUMBERS
PIN NUMBERS
PIN LABELS
ACTUAL FUSE NUMBERS
OPTION P/E
3562
PR/Ō.E.
INPUT VARIABLE
PRESENT STATE
COMPLE-MENT
NEXT STATE
OUTPUT FUNCTION
PIN NUMBERS
PIN LABELS
(LOGIC TERMS-T)
INCREMENT
NOTE: Fuse Number = First Fuse Number + Increment
DENOTES FIXED CONNECTION

34-101-0050


Logic Diagram 82S152/153
PIN LABELS
PIN NUMBERS
INCREMENT
FIRST FUSE NUMBERS
(LOGIC TERMS-P)
(CONTROL TERMS)
TERM LABELS
PIN LABELS
ACTUAL FUSE NUMBERS
PIN NUMBERS
PIN LABELS
NOTE: Fuse Number = First Fuse Number + Increment

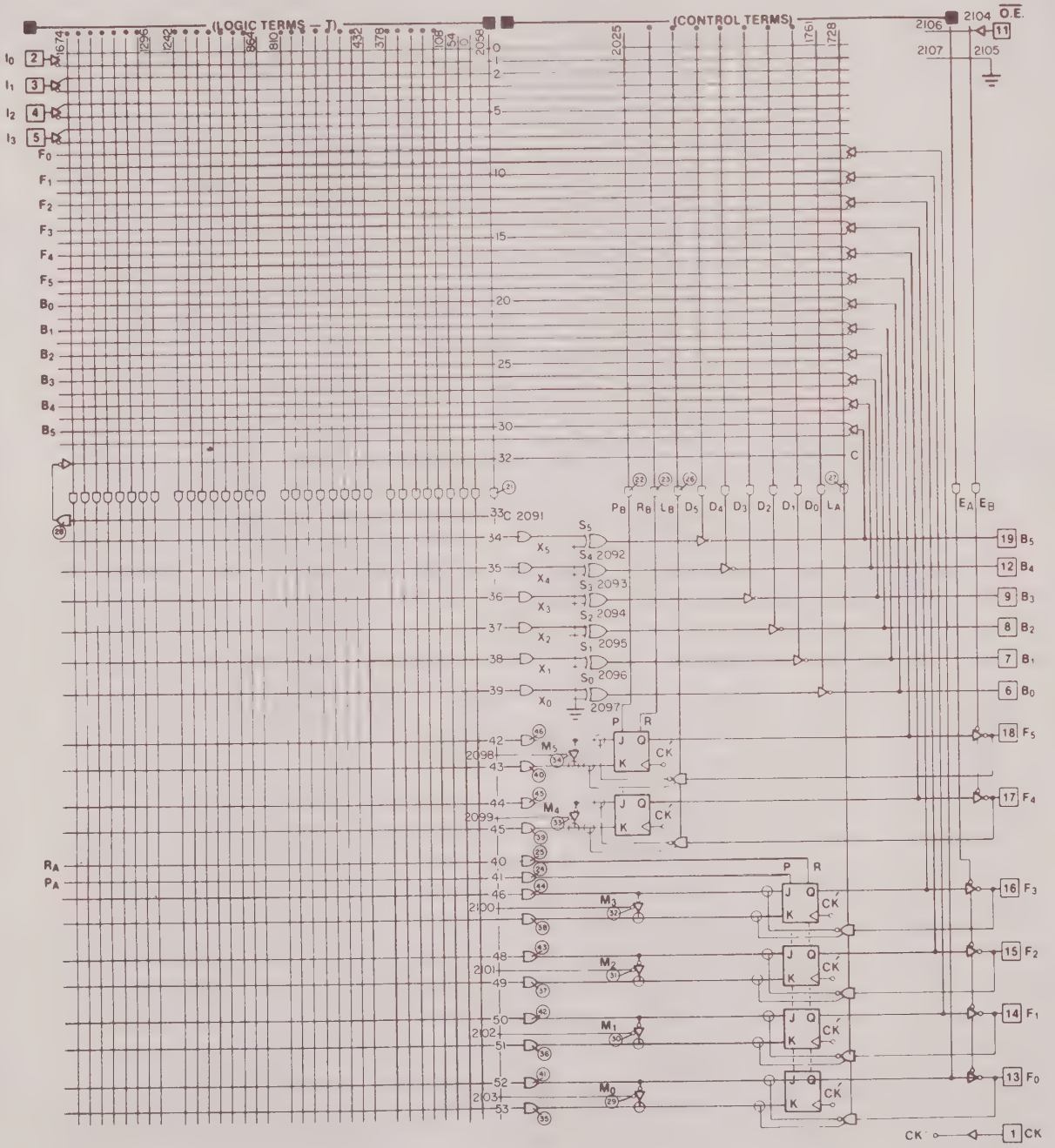
34-101-0051

Logic Diagram 82S155



NOTES.

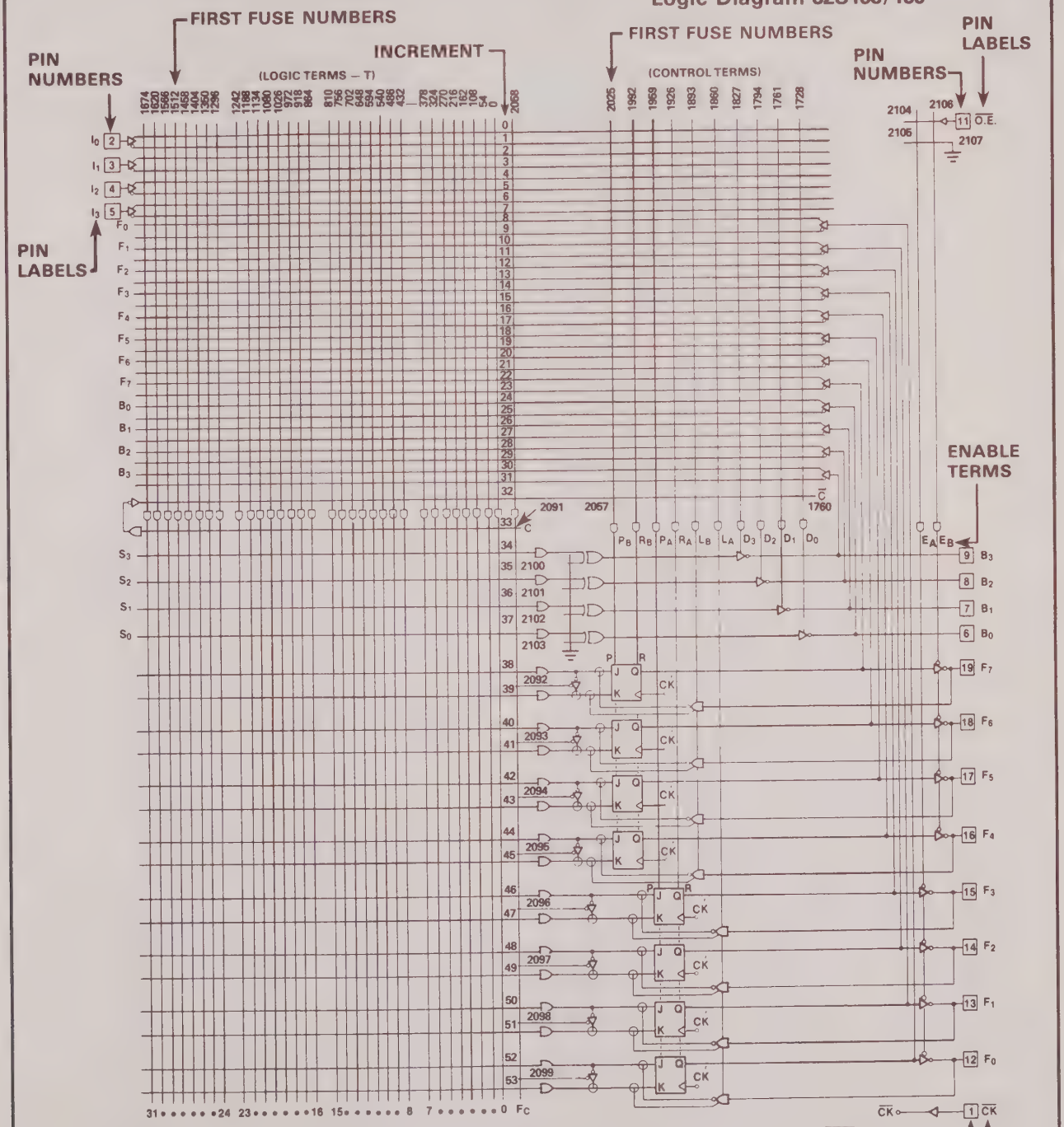
1. All OR gate inputs with a blown link float to logic "0"
2. All other gates and control inptus with a blown link float to logic "1"
3. ⊕ denotes WIRE-OR
4. ○ denotes node number.



NOTES.

1. All OR gate inputs with a blown link float to logic "0".
2. All other gates and control inputs with a blown link float to logic "1"
3. ⊕ denotes WIRE-OR
4. ◯ denotes node number.

Logic Diagram 82S158/159

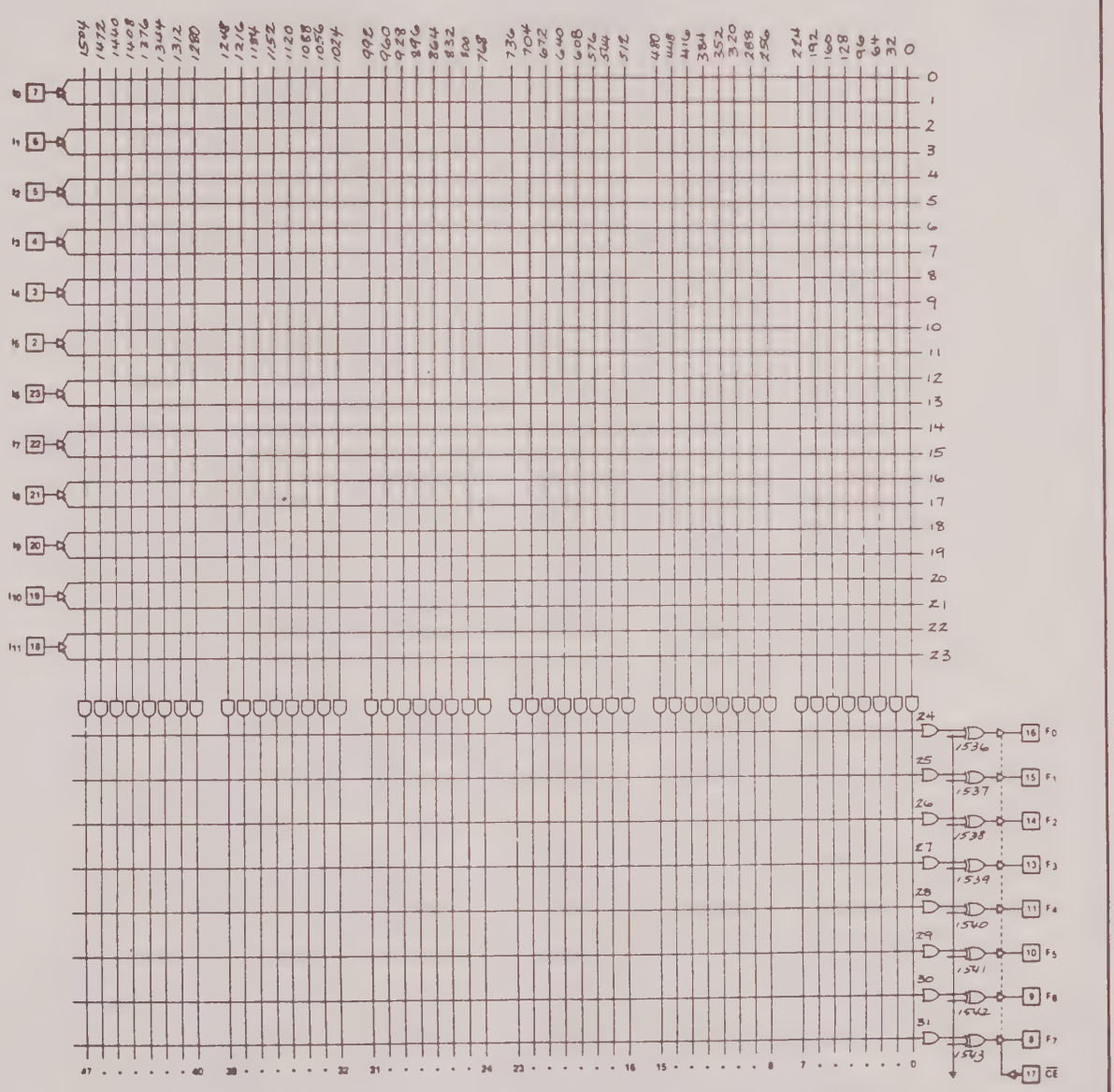


NOTES:
1. All OR gate inputs with a blown link float to logic "0".
2. All other gates and control inputs with a blown link float to logic "1".
3. Programmable connection.
4. ⊕ denotes WIRE-OR.

NOTE: Fuse Number = First Fuse Number + Increment

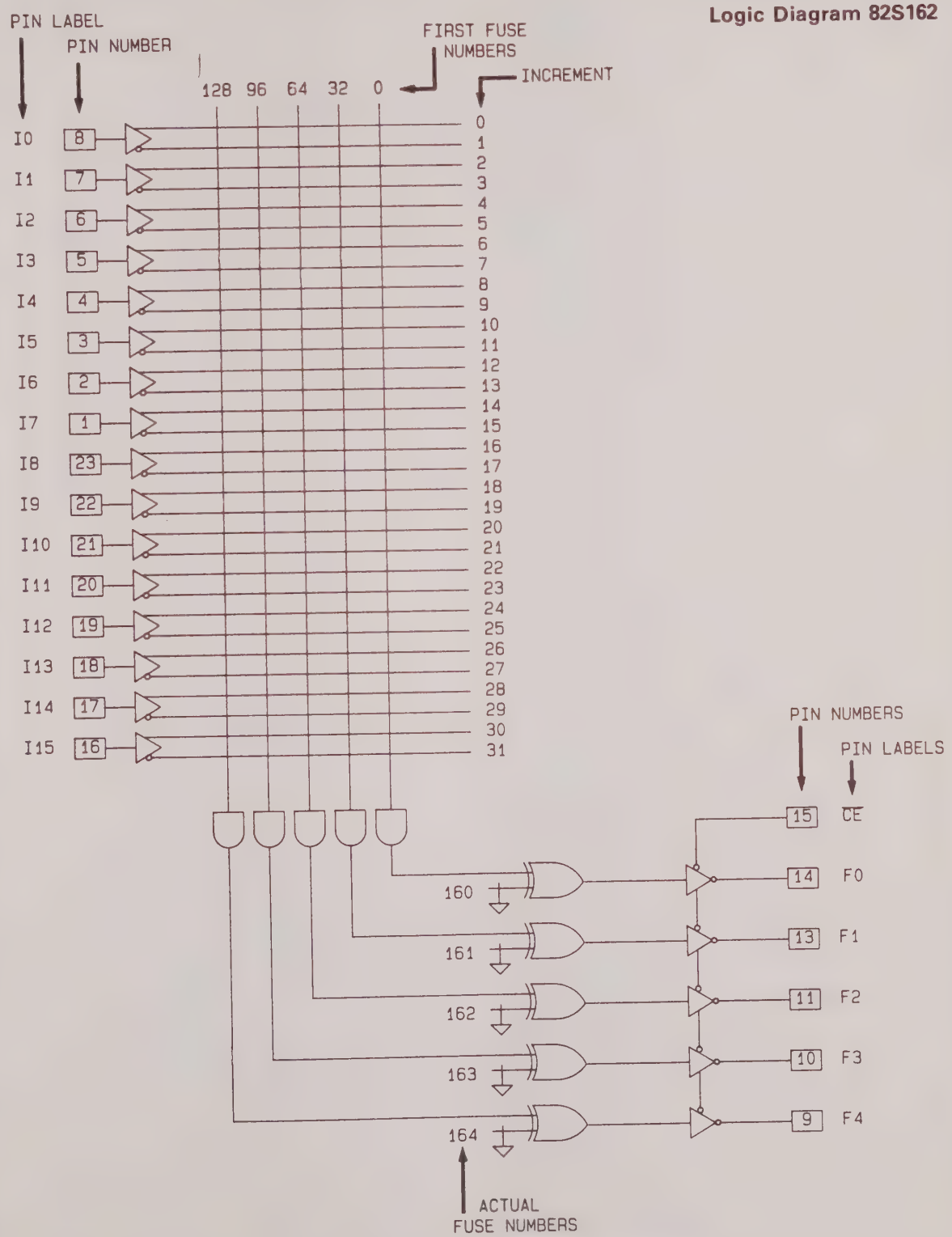
34-101-0054

Logic Diagram 82S161



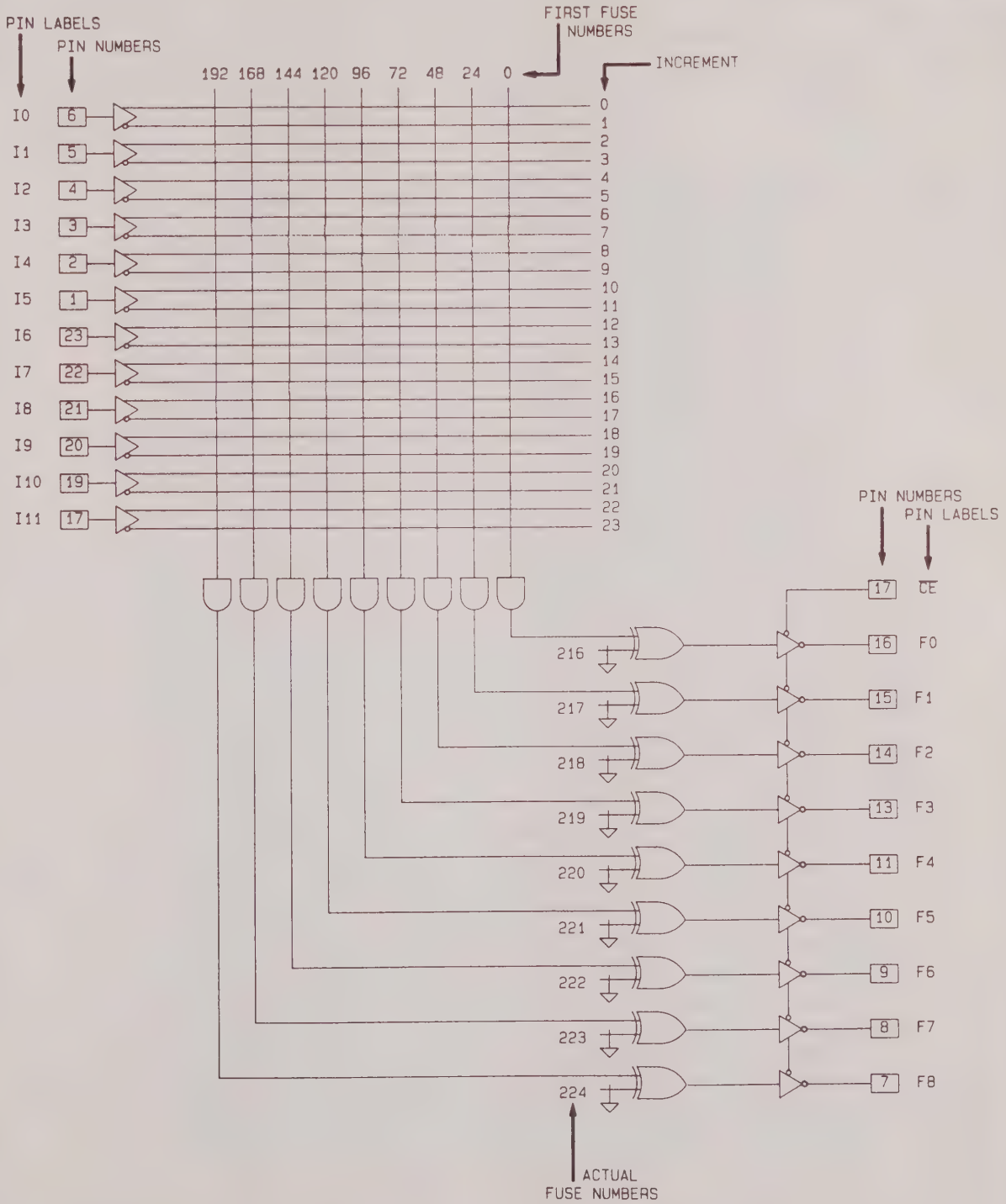
34-101-0055

Logic Diagram 82S162



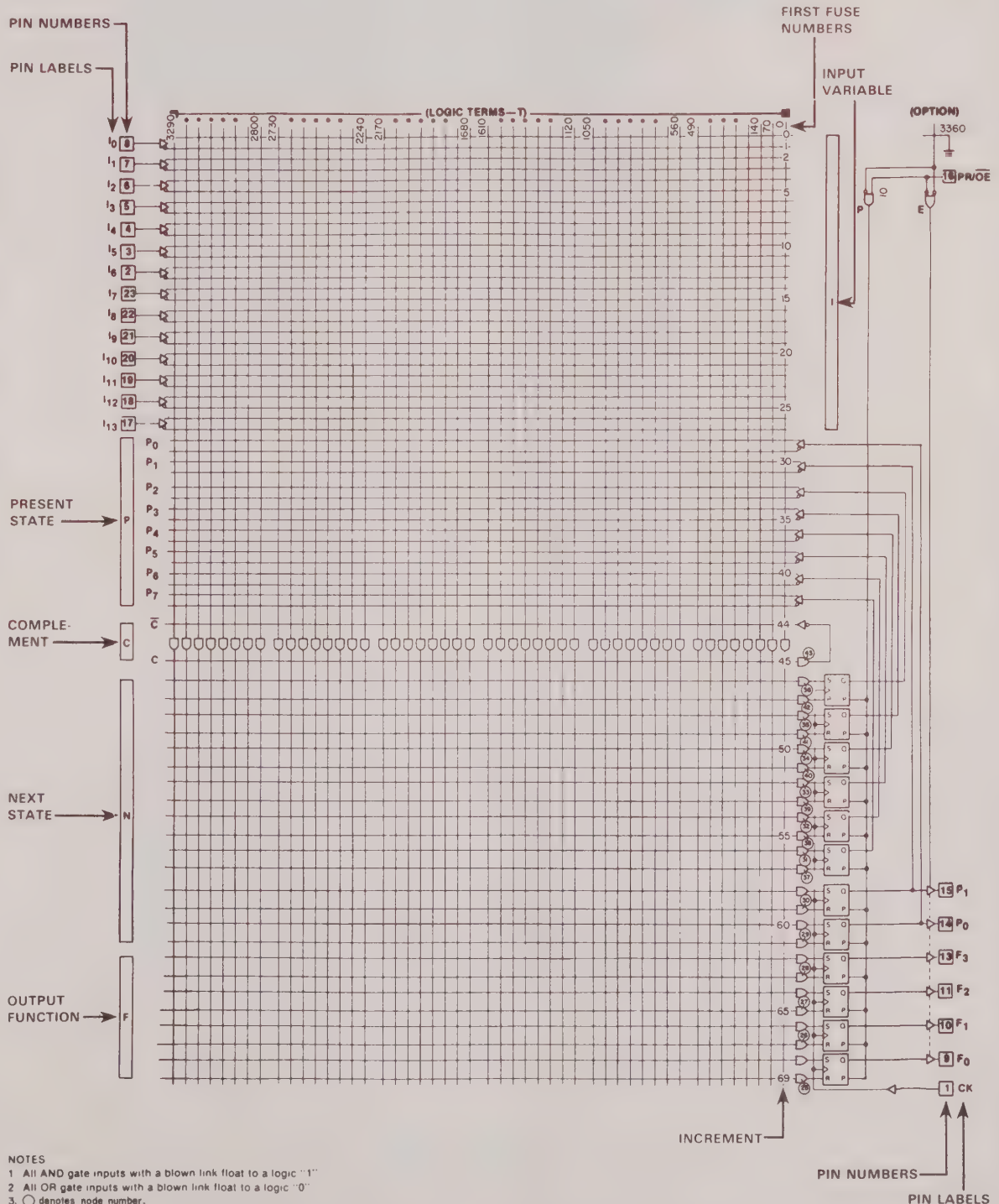
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram 82S163



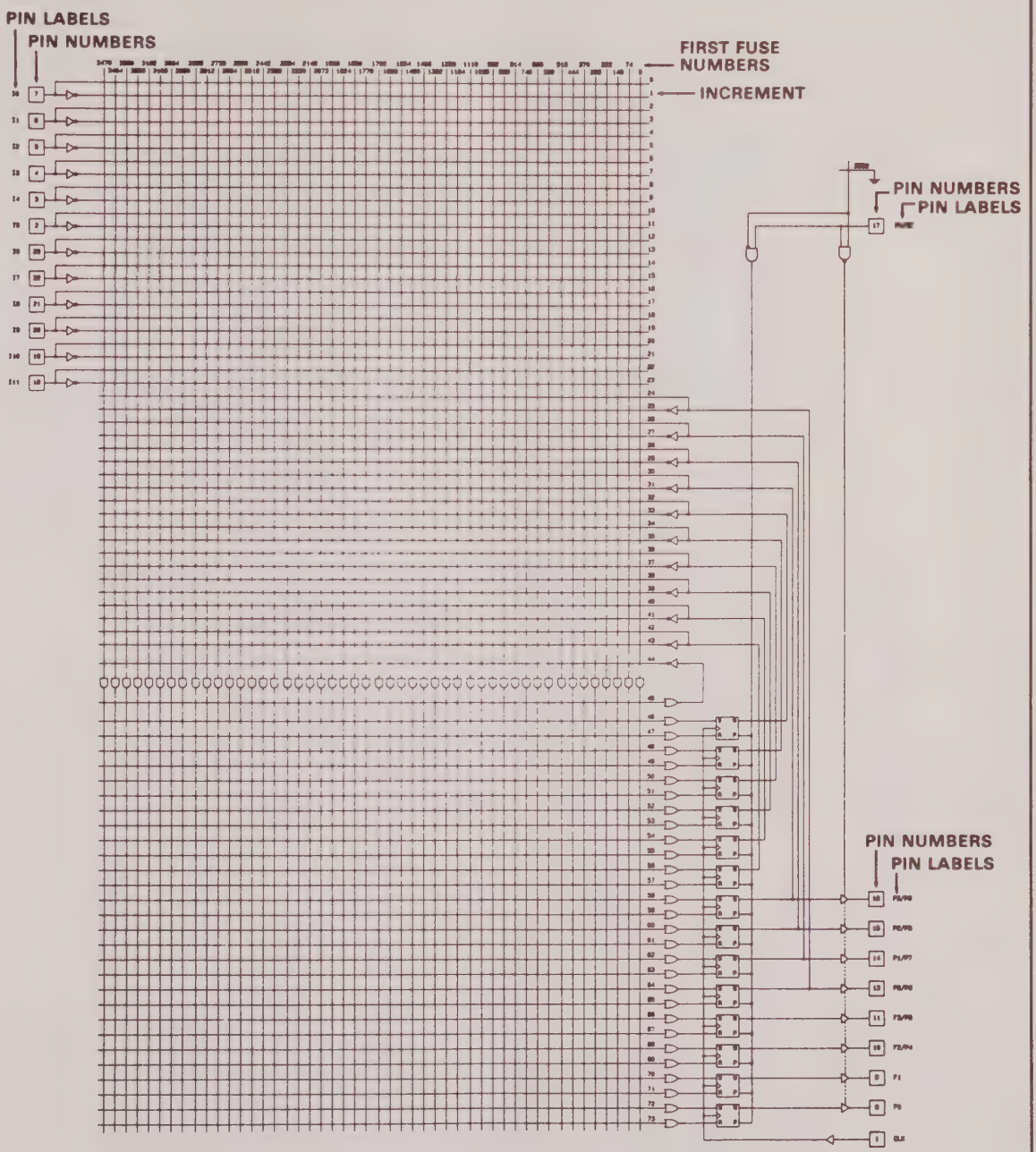
NOTE: FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram 82S166/167/167



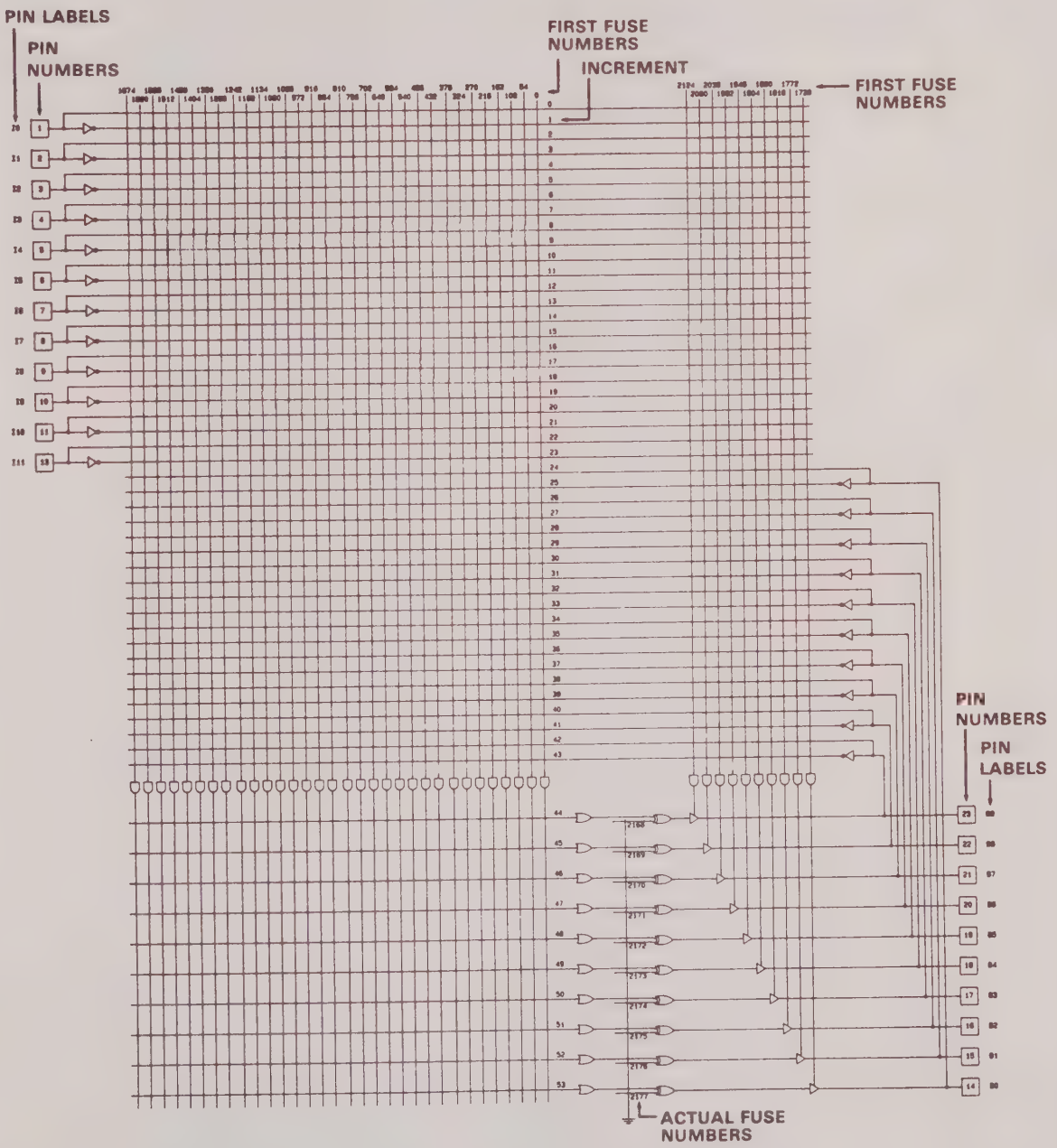
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram 82S168



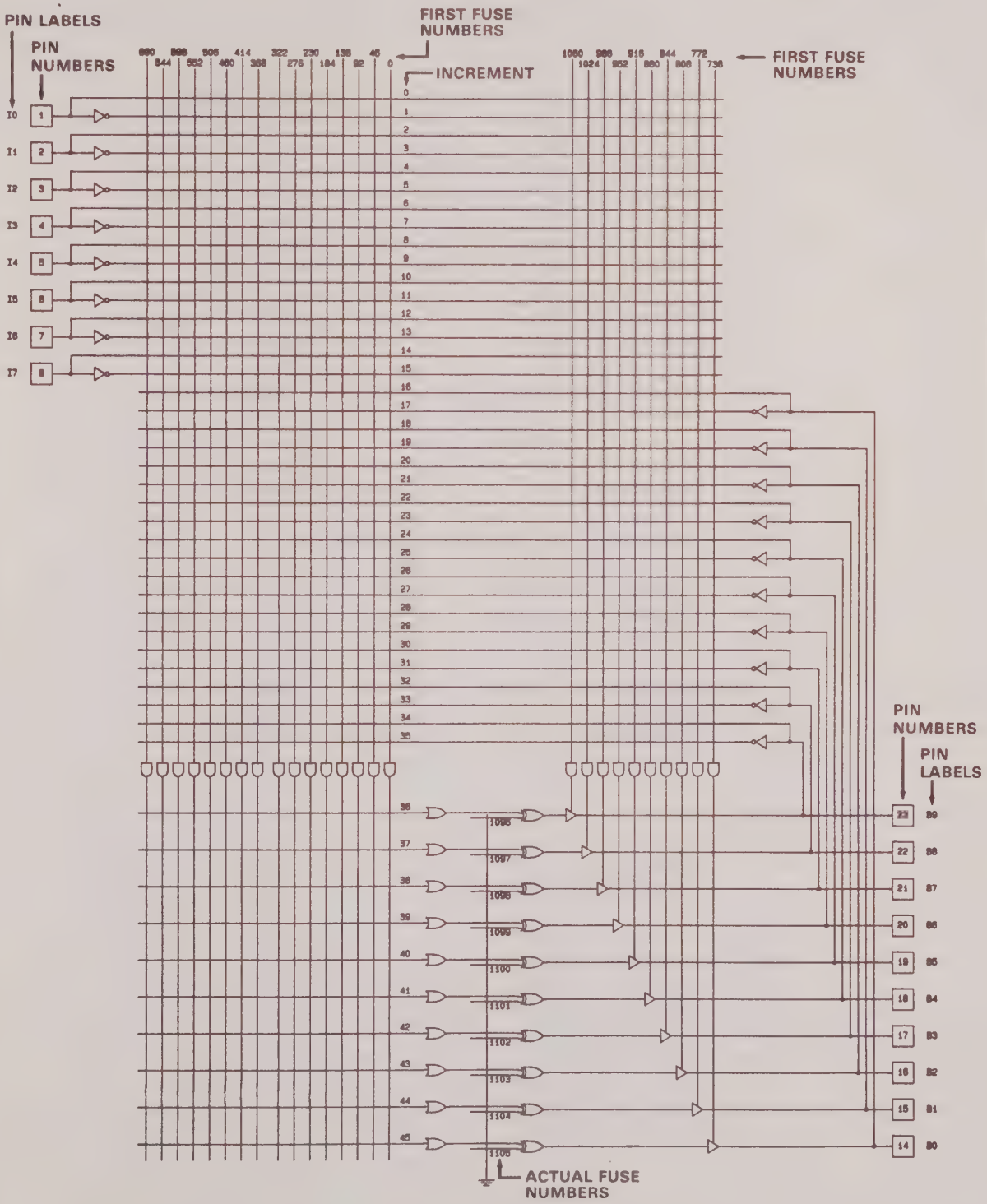
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram 82S173

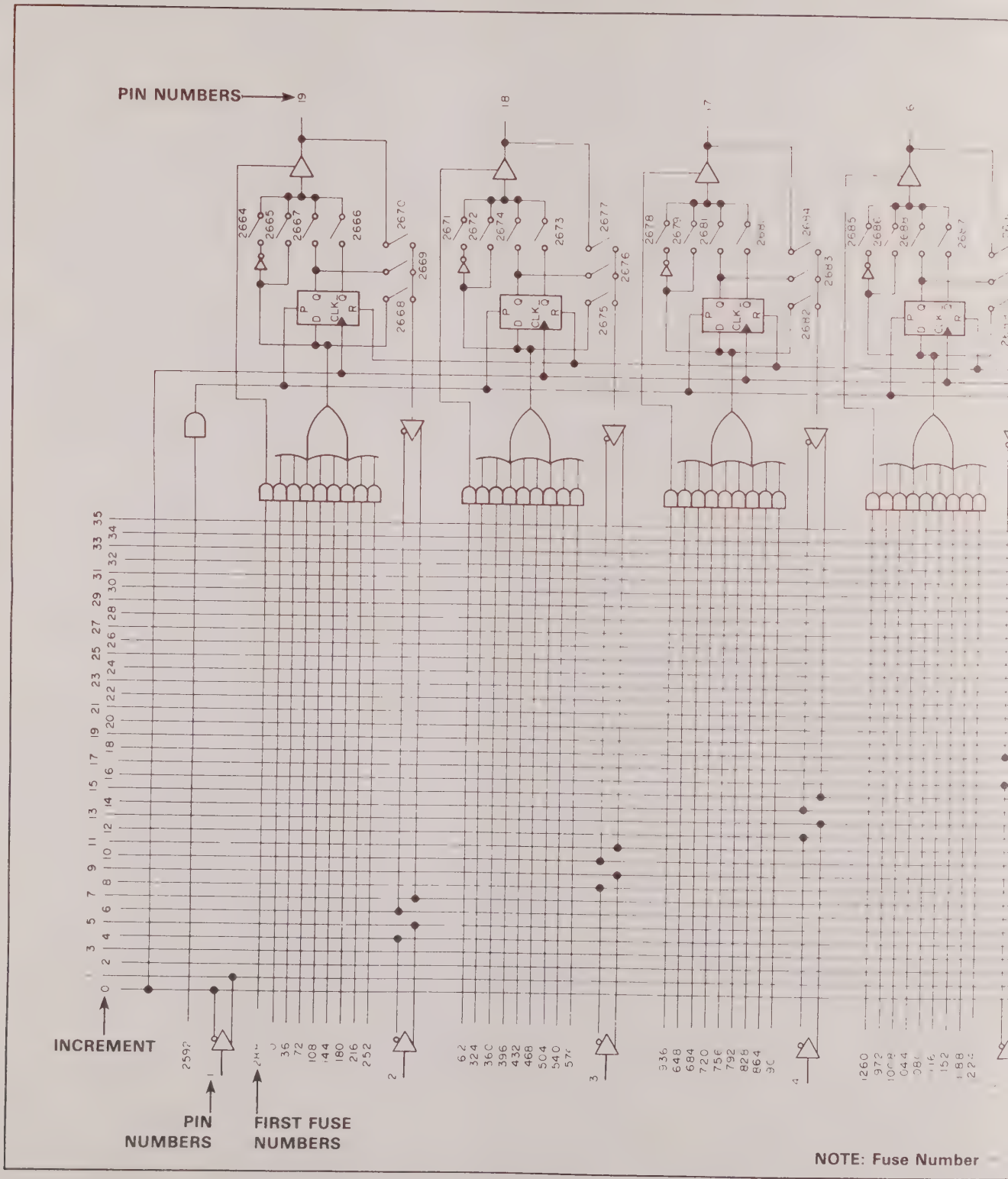


NOTE: Fuse Number = First Fuse Number + Increment

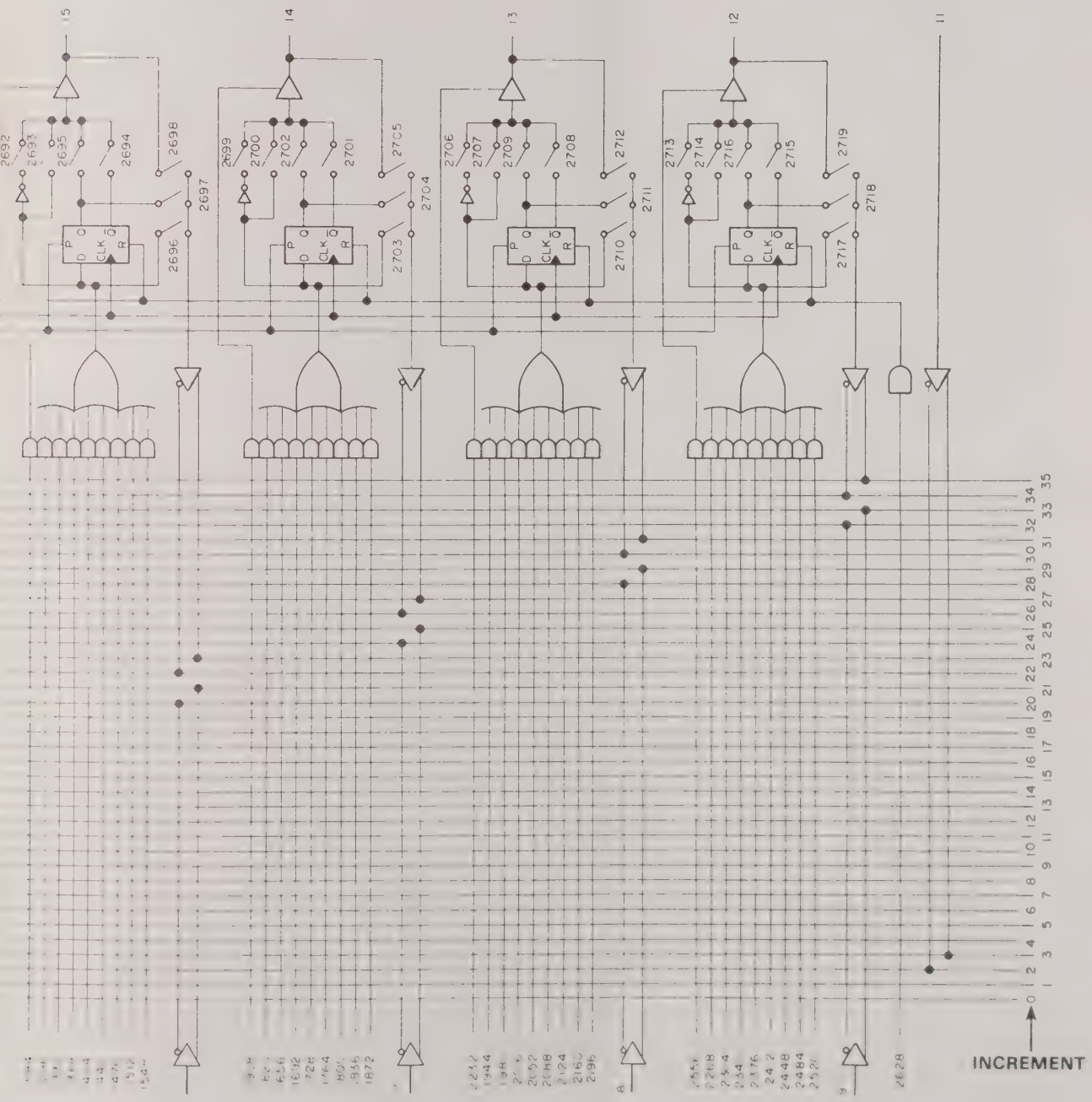
Logic Diagram CK2605



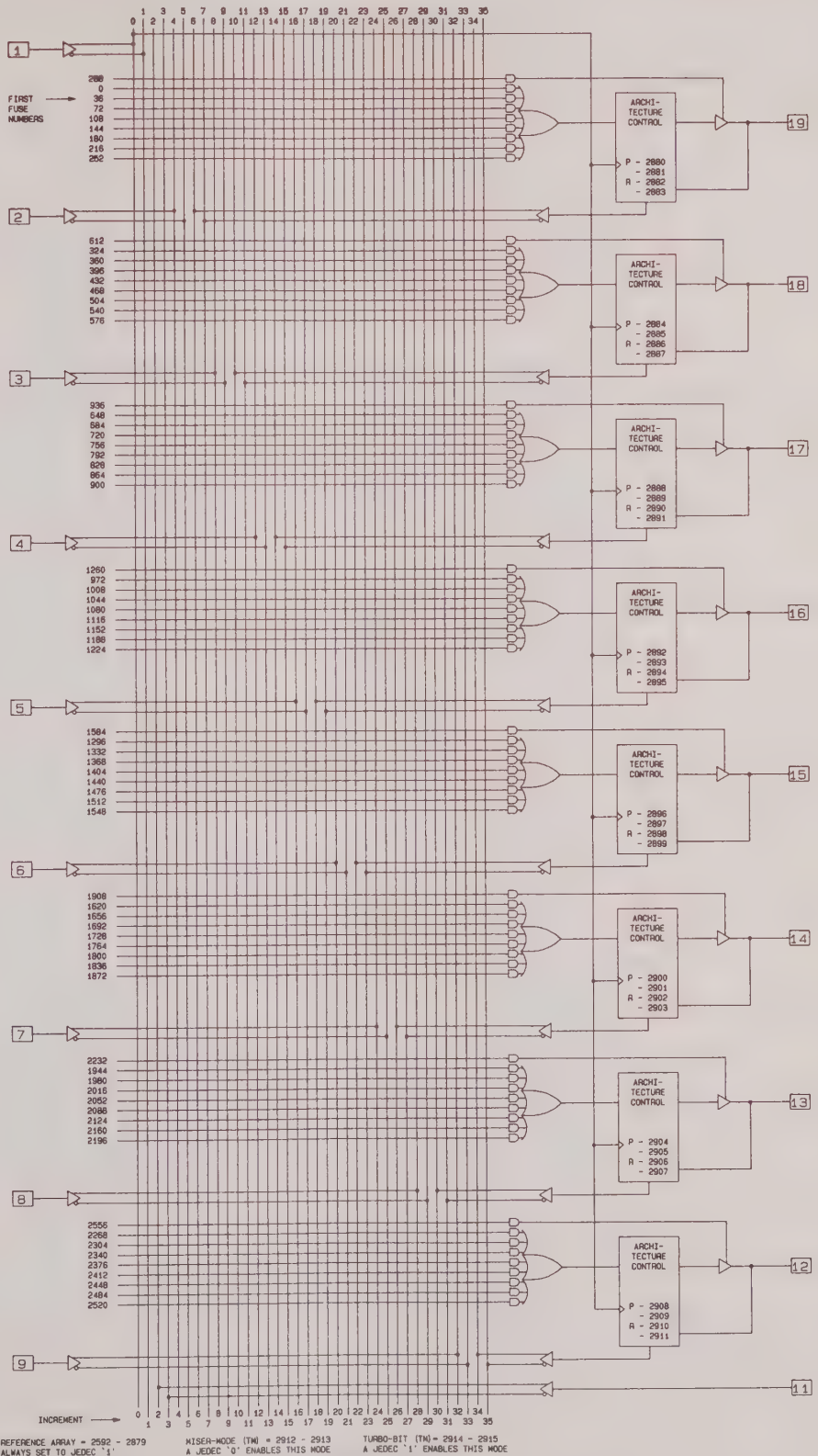
NOTE: Fuse Number = First Fuse Number + Increment


PIN NUMBERS
19
18
17
INCREMENT
PIN NUMBERS
FIRST FUSE NUMBERS
NOTE: Fuse Number

Logic Diagram ALTERA EP300



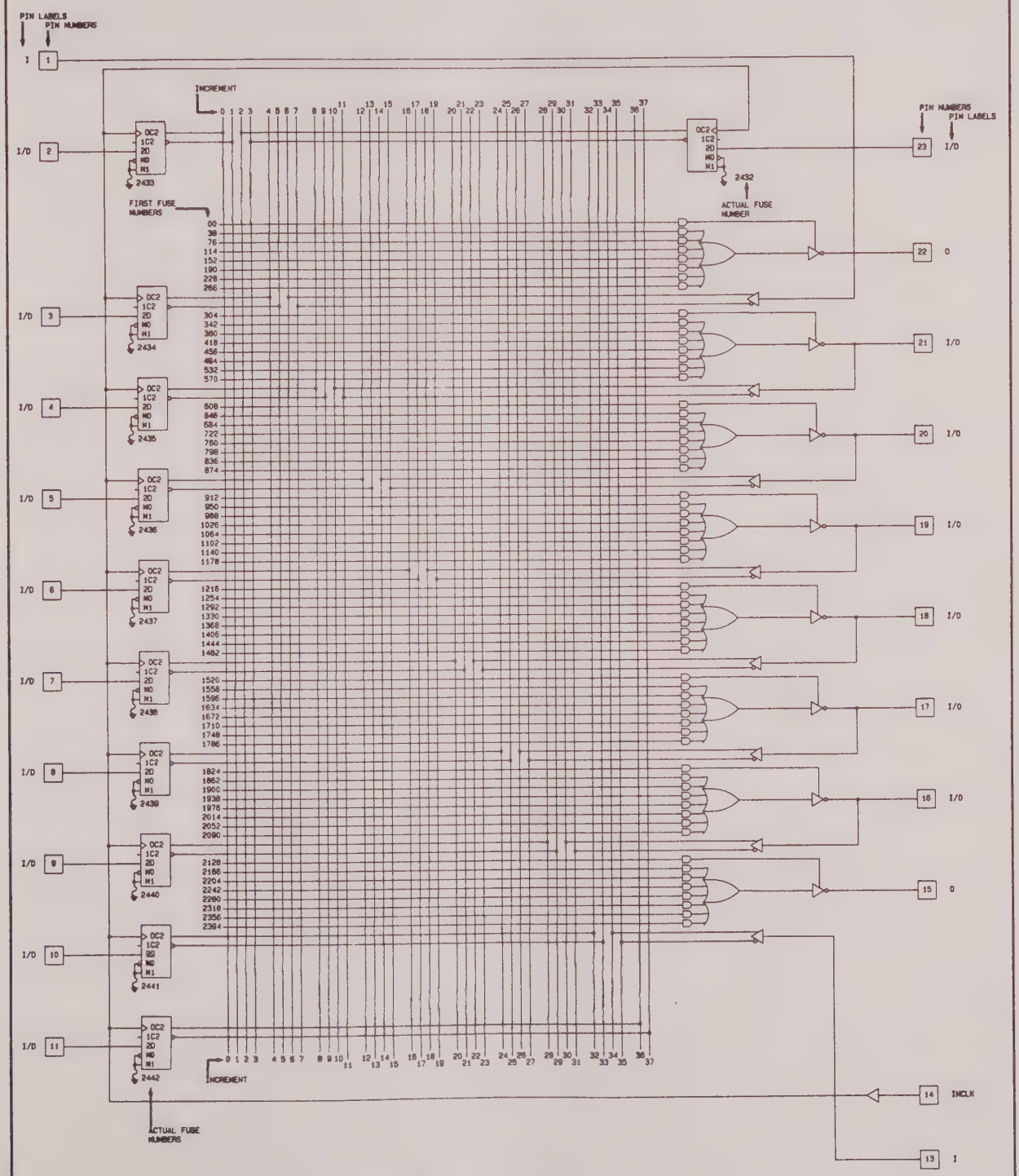
t Fuse Number + Increment



NOTES:

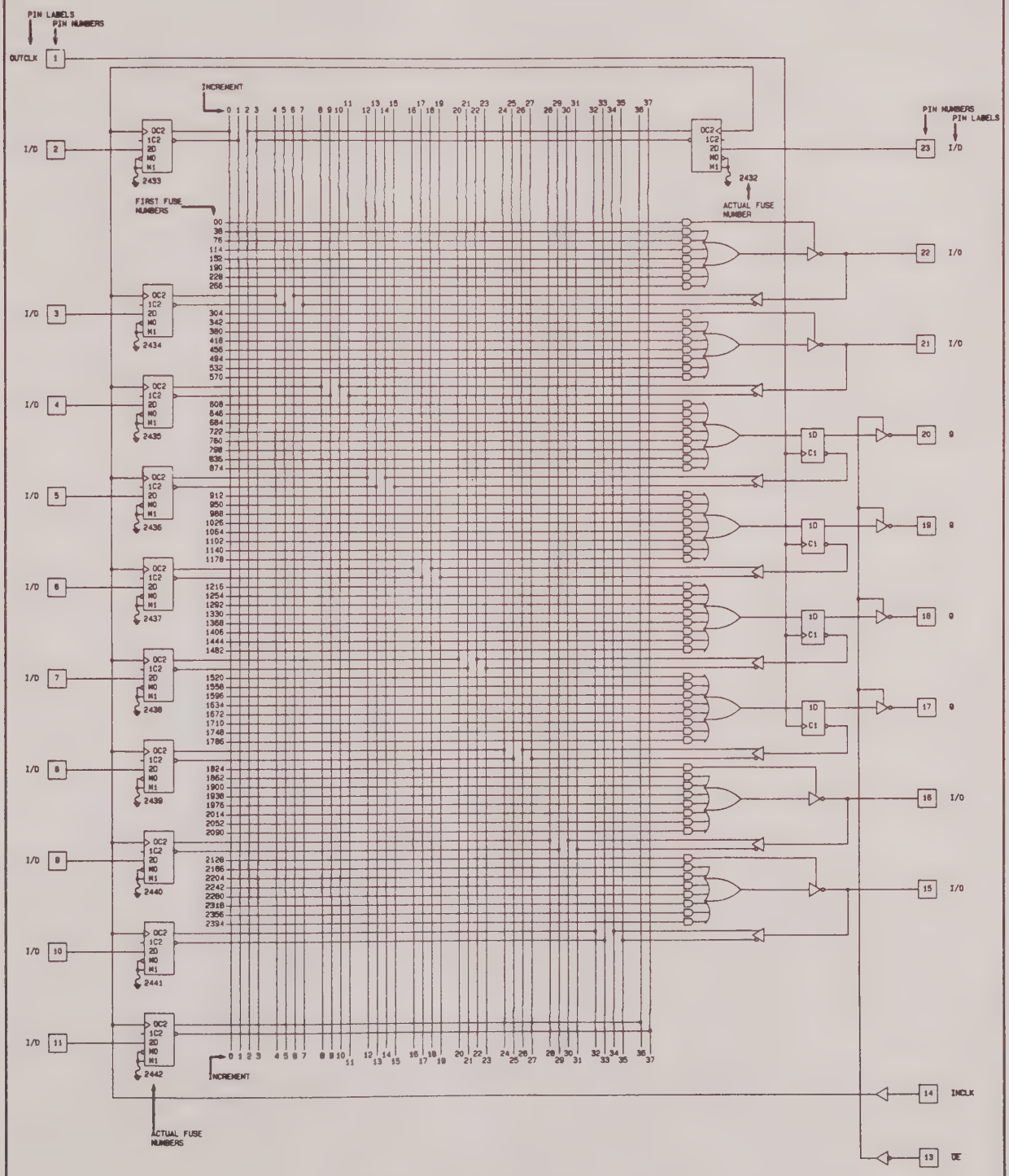
1. INSIDE EACH ARCHITECTURE CONTROL BLOCK, THE "P" FUSE NUMBERS ARE THE POLARITY FUSES, AND THE "A" FUSE NUMBERS ARE THE REGESTER FUSES
2. ALL FUSES LISTED AS PAIRS SHOULD BE PROGRAMMED AS PAIRS BY PLACING BOTH FUSES TO THE SAME STATE.
3. FUSE NUMBER = FIRST FUSE NUMBER + INCREMENT

Logic Diagram TIBPALR19L8



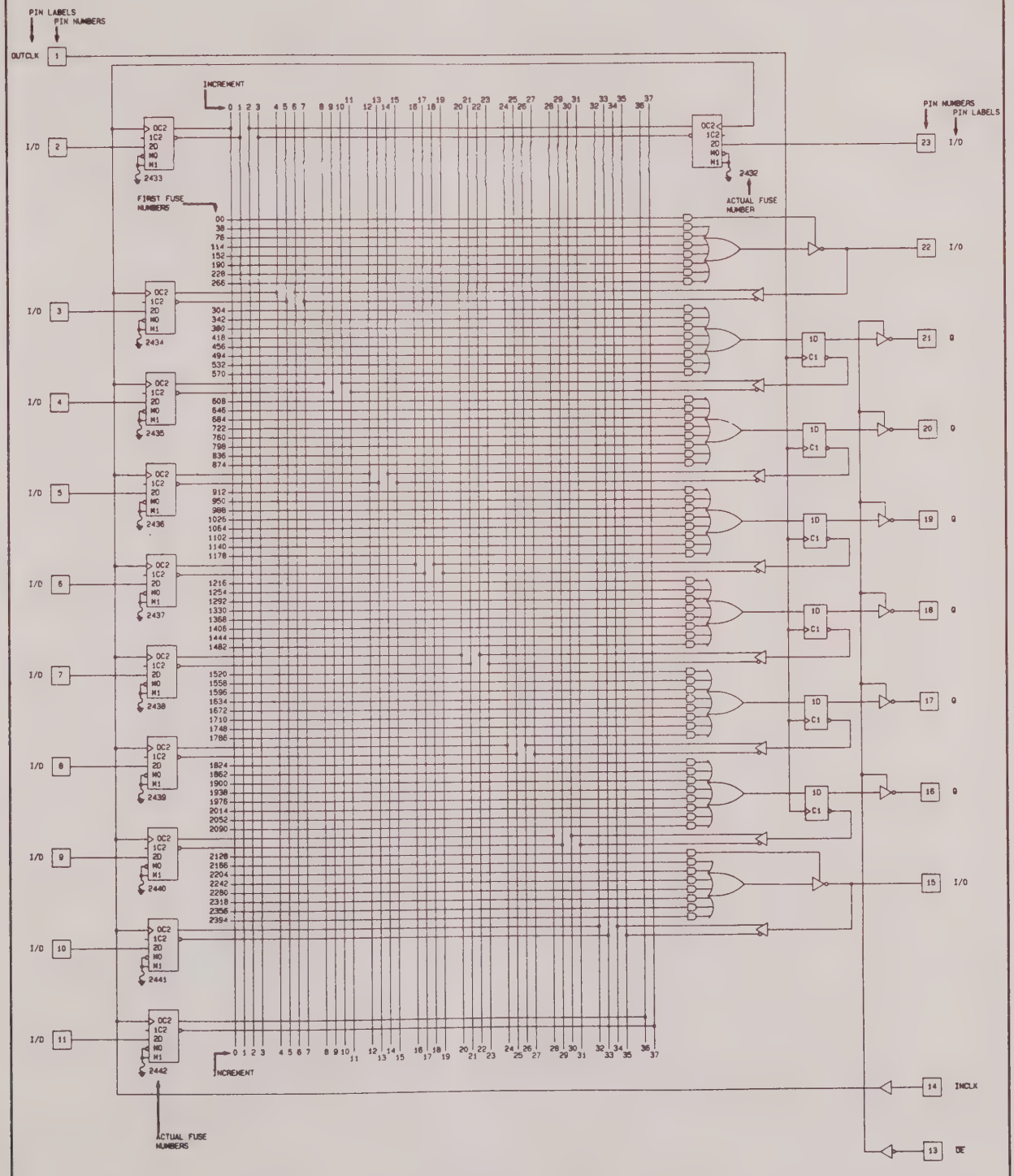
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram TIBPALR19R4



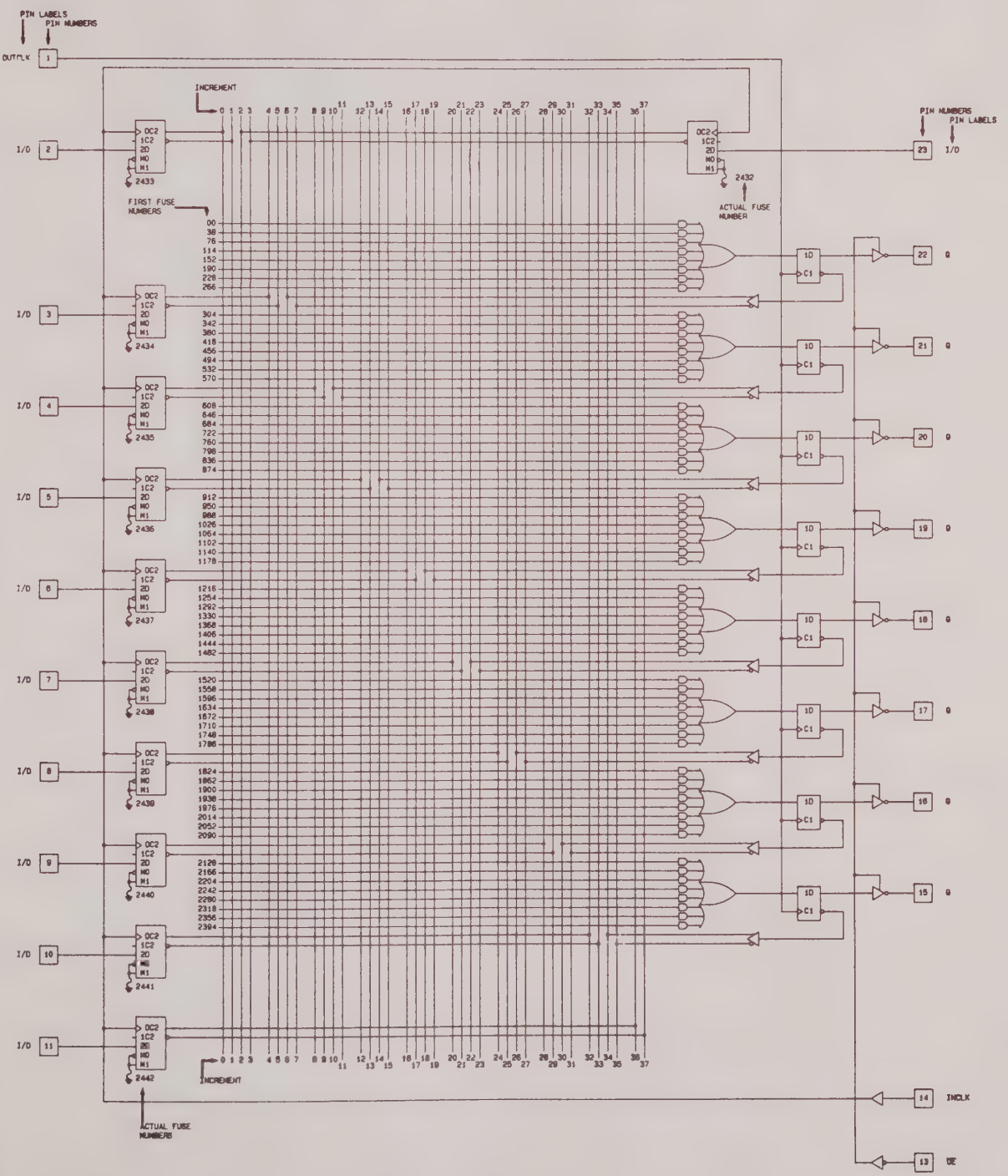
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram TIBPALR19R6



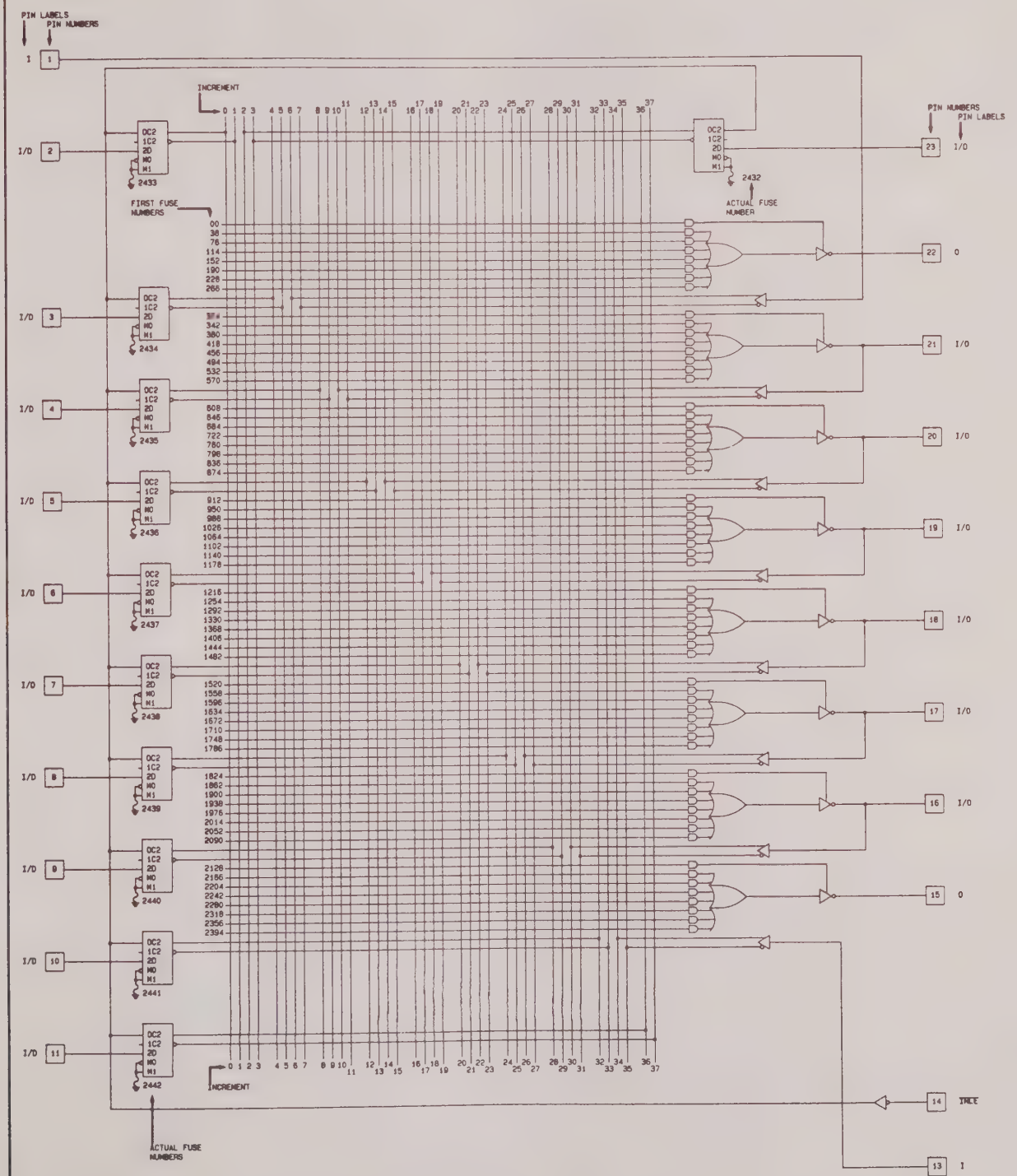
NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram TIBPALR19R8

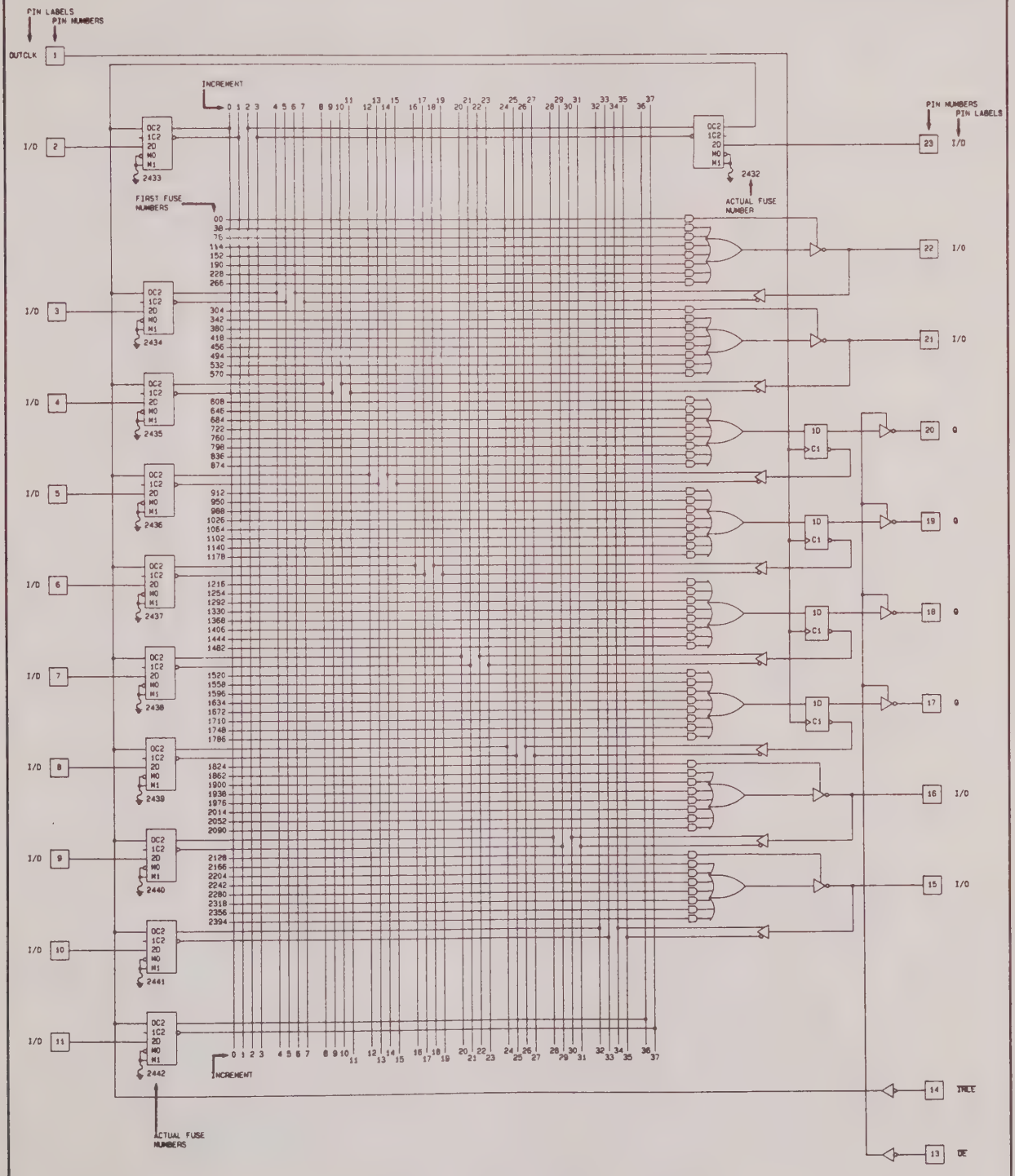


NOTE: Fuse Number = First Fuse Number + Increment

Logic Diagram TIBPALT19L8

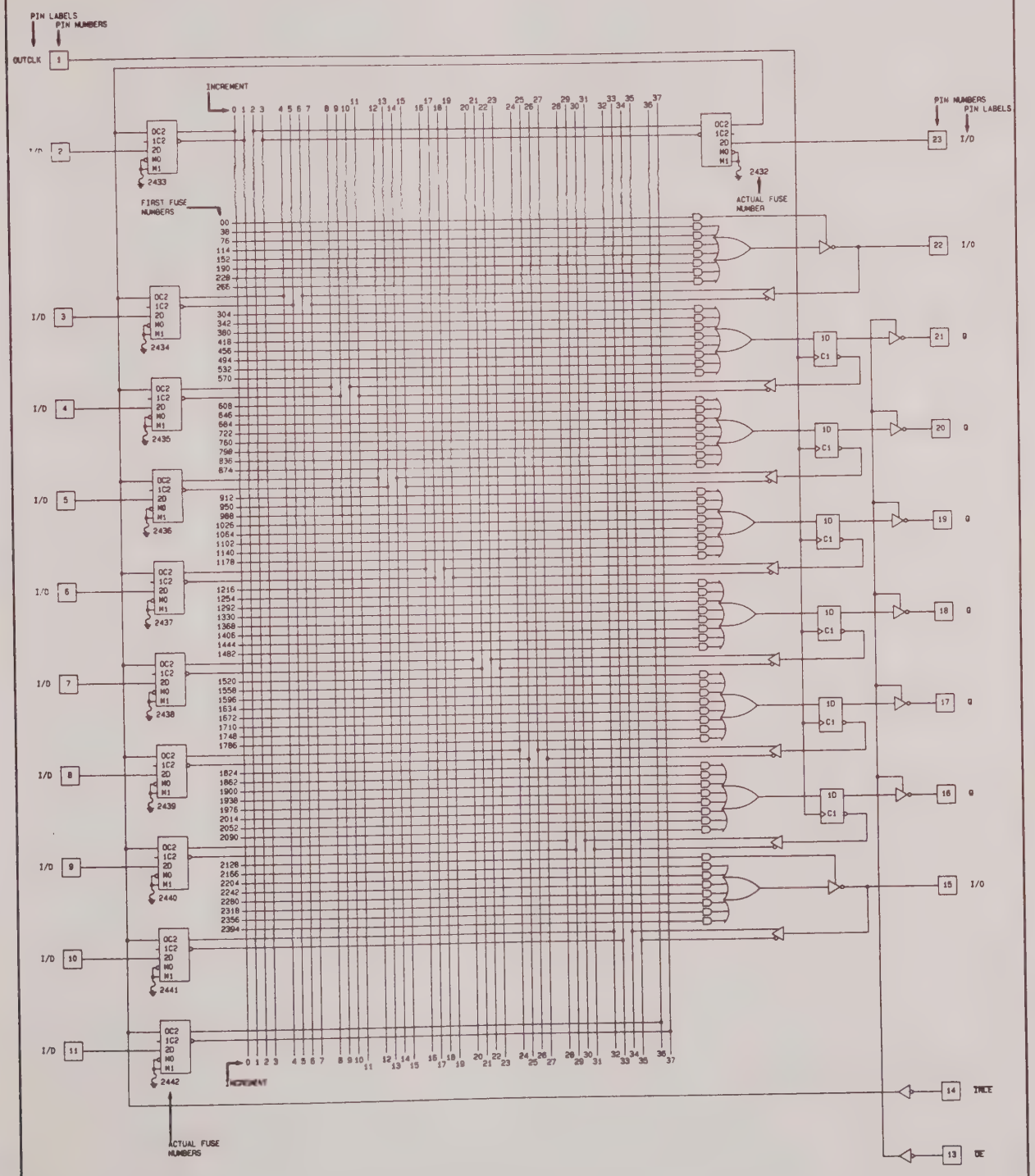


Logic Diagram TIBPALT19R4

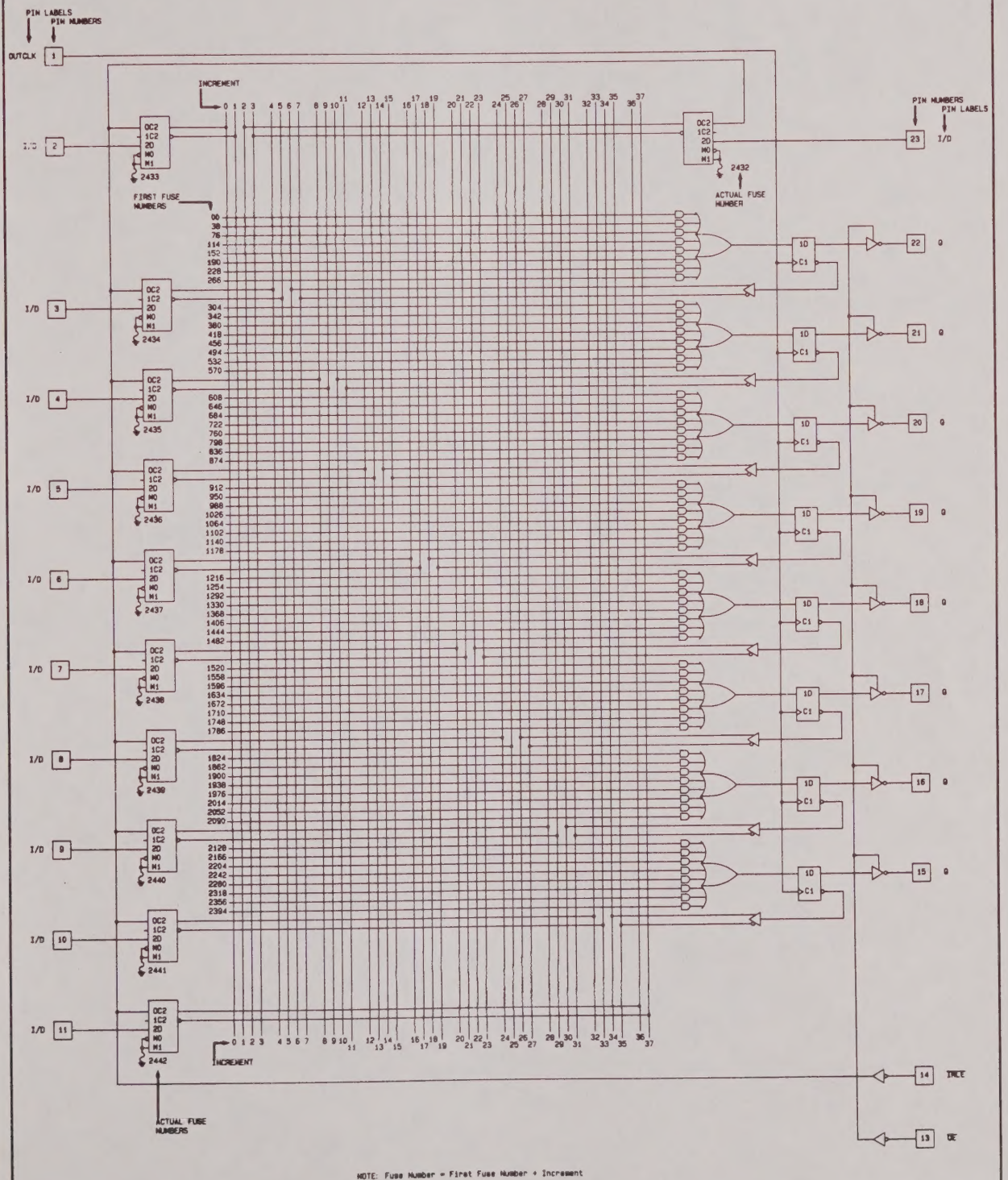


NOTE Fuse Number = First Fuse Number + Increment

Logic Diagram TIBPALT19R6



Logic Diagram TIBPALT19R8



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